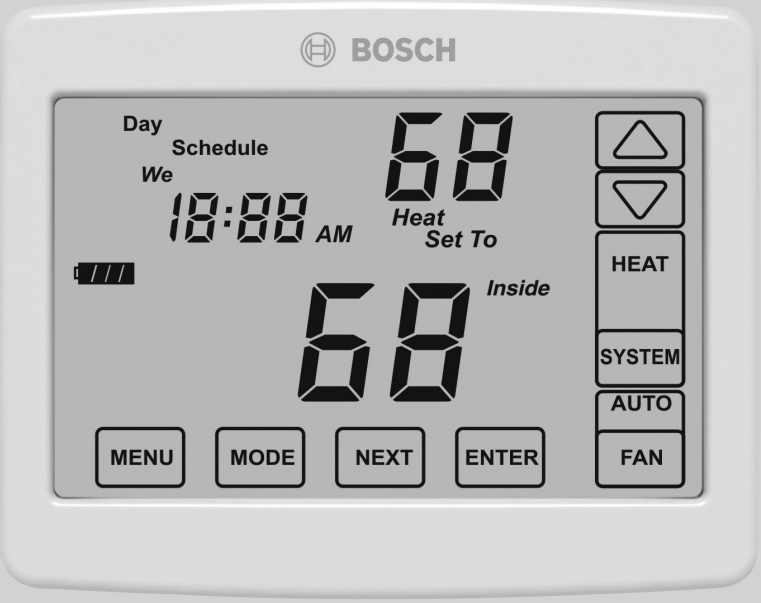
Installation and Operation Manual

Thermostat Series

BOSCH COMMUNICATING THERMOSTATS TSTBT4H2CP SERIES



TSTBT4H2CP-M--A

TSTBT4H2CPHM--A

6 720 220 387 Revised 06-13

BOSCH

TABLE OF CONTENTS

The TSTBT4H2CP Series offers:..... 3

Thermostat Application Guide..... 3

TSTBT4H2CP Series Thermostat Quick Reference 4

Features of the Transmitting and Receiving Module (TRM)..... 5

Installing the TSTBT4H2CP Thermostat Series..... 6

Wall Locations 6

Installing the TRM1 Receiving Module 6

Wiring the Thermostat and Receiving Module..... 7

Wiring Diagrams 7

Temperature Sensor Connections 9

TS1 and TS2 9

Remove the Battery Tab..... 10

Install the Thermostat on the Sub-Base 10

Tech Setup Features 11

Tech Setup Menu 11

Tech Menu Setup Explanations..... 17

Understanding Swing and Staging..... 25

Displaying and Resetting the Service Messages 26

Fault Codes..... 26

Enabling Fault Code Messages..... 26

Displaying Equipment Service Messages..... 26

High Pressure Alert..... 26

Low Pressure Alert..... 26

Freeze Condition Alert..... 27

Condensate Line Alert 27

Brownout Alert 27

Evaporator Freeze Alert 27

Lost Equipment Communication 28

Lost Gateway Communication 28

Low Heating Output..... 28

Low Cooling Output..... 28

Lost Power..... 28

Initial Thermostat Settings 29

Selecting Heating or Cooling 29

Selecting Auto or Cont Fan 29

Adjusting the Temperature Setting. 29

Adjusting RH Setpoints for Humidity Control..... 29

Selecting Operating Mode 29

Setting the Time and Day of the Week..... 30

Schedule Programming..... 30

7 Day Program Schedule..... 31

Custom Program Schedule 31

Locking the Thermostat 32

Hidden Lock key..... 32

Calibrating the Indoor Relative Humidity Sensor 33

Displaying the Time and Temperature Schedule 33

Factory Default Program. 34

TSTBT4H2CP Thermostat Series Installation Troubleshooting 35

Available Accessories for the TSTBT4H2CP Thermostat Series 37

Product Limited Warranty..... 38

Warranty Coverage 38

Items Not Covered 38

Conditions Of Warranty 38

Limited Warranty 39

Warranty Claims Process 39

The Bosch TSTBT4H2CP Thermostat Series consists of 4-wire MODBUS communicating thermostats. Utilizing RS485 MODBUS protocol, the TSTBT4H2CP Thermostat Series can communicate with the equipment, monitor the performance, and report the status of the equipment.

The MODBUS protocol is received and then translated to pulses to be received by the HVAC equipment. This translation is performed by the TRM (Transmitting and Receiving Module). The thermostat and TRM communicate via 2 wire MODBUS, the TRM and the HVAC equipment communicates via 4-12 wires utilizing pulses.

The Bosch TSTBT4H2CP Thermostat Series communicates utilizing MODBUS protocol to the TRM or will communicate directly utilizing MODBUS protocol to a Bosch Zone Panel (P/N: 7738002975) if a zone system is installed.

Although MODBUS is a standard protocol, this only is true for the architecture of the protocol. The data that is actually transmitted varies from manufacturer to manufacturer. Bosch TSTBT4H2CP Thermostat Series will only communicate correctly with the TRM or Bosch Zone Panel. Do not attempt to mix the Bosch TSTBT4H2CP Thermostat Series with any other controller.

THE TSTBT4H2CP SERIES OFFERS:

- Modbus thermostat with large LCD and touch screenwith blue LED back lighting
- Low back light level when touch keys not used
- Four schedules per day, 7-day programmable
- Up to four-stage heating and 2-stage cooling
- Optional automatic fan operation during daytime on selected days
- Compatible with conventional and dual fuel heatpumps and gas electric systems
- Optional temperature sensors for dis-charge air temperature and outdoor air temperature
- Optional remote space temperature sensors
- Diagnostic monitor indicates equipment alerts and loss of communications
- Service monitors for filter, UV Bulb and humidifier pad
- Optional keyboard lock
- Receiving Module COM LED blinks during Modbuscommunication and turns red if communication with thermostat is lost
- Optional return air temperature sensor maintains safe space temperature if communication with thermostat is lost for 10 minutes

The TSTBT4H2CPHM--A offers all of the above features in addition to:

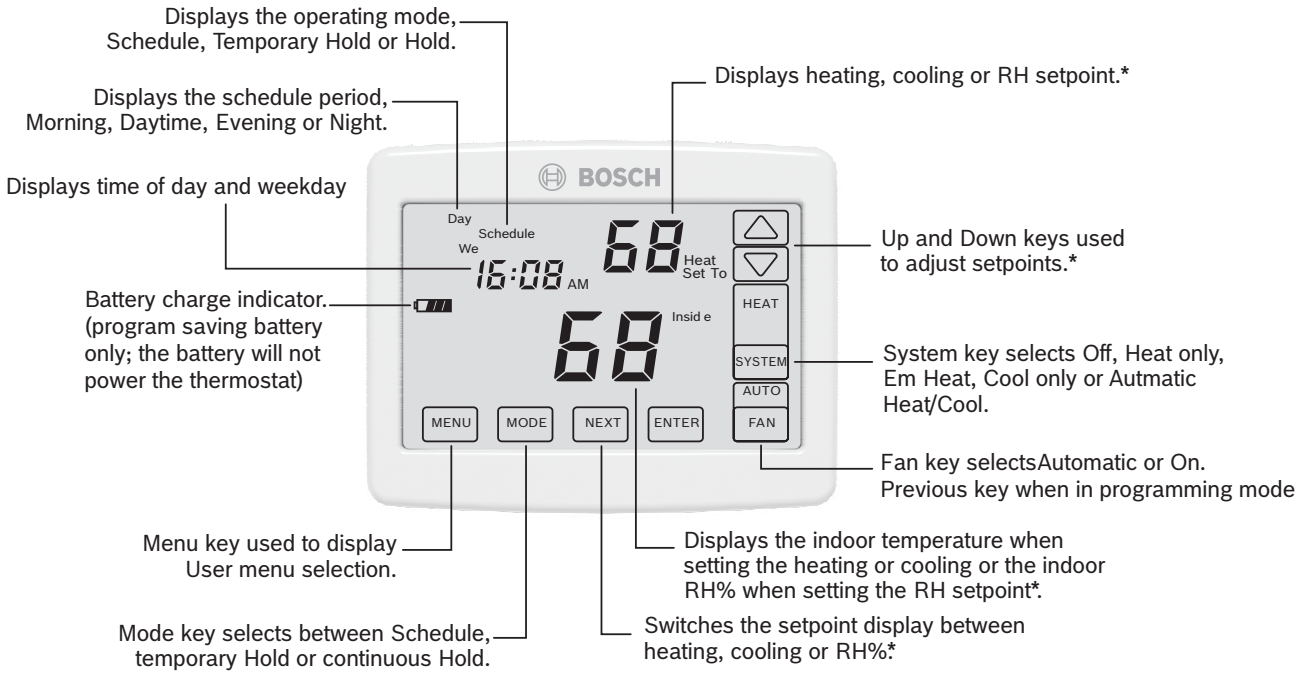
- Optional Humidifier Control
- Cool to Dehumidify for further humidity removal
- Selectable over cooling temperature used with Cool to dehumidify feature

THERMOSTAT APPLICATION GUIDE

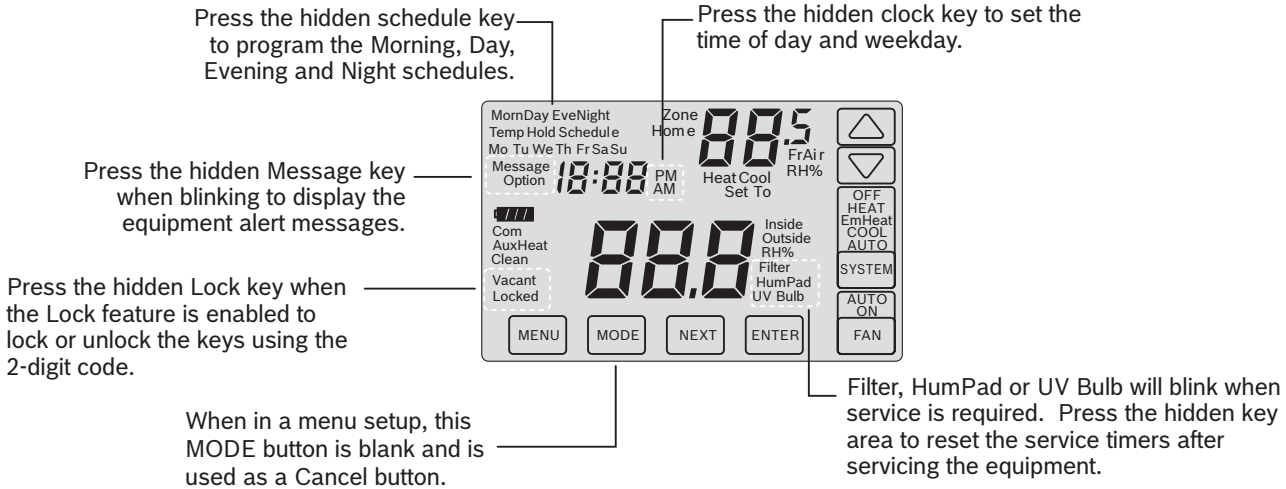
Description	Available
Gas or Oil Heat	Yes
Electric Furnace	Yes
Heat Pump (No Aux. or Emergency Heat)	Yes
Heat Pump (With Aux. or Emergency Heat)	Yes
Multi-Stage Systems	Yes
Heat Only Systems	Yes
Cool Only Systems	Yes
Dual Fuel Systems	Yes
Milivolt	Yes
Humidifier Control	Yes
Auto Changeover	Yes
MODBUS Communicating	Yes

TSTBT4H2CP SERIES THERMOSTAT QUICK REFERENCE

Getting to know your thermostat


Displays the operating mode, Schedule, Temporary Hold or Hold.
Displays the schedule period, Morning, Daytime, Evening or Night.
Displays time of day and weekday
Battery charge indicator. (program saving battery only; the battery will not power the thermostat)
Displays heating, cooling or RH setpoint.*
Up and Down keys used to adjust setpoints.*
System key selects Off, Heat only, Em Heat, Cool only or Autmatic Heat/Cool.
Fan key selectsAutomatic or On. Previous key when in programming mode
Menu key used to display User menu selection.
Mode key selects between Schedule, temporary Hold or continuous Hold.
Displays the indoor temperature when setting the heating or cooling or the indoor RH% when setting the RH setpoint*.
Switches the setpoint display between heating, cooling or RH%.*
BOSCH
Day
Schedule
We
16:08 AM
68
Heat Set To
Inside
68
HEAT
SYSTEM
AUTO
FAN
MENU
MODE
NEXT
ENTER

MENU, MODE, NEXT, & ENTER buttons change functionalities during programming or other type of menu setting changes. Their function is described for that specific function within the Tech Setup Section.


Press the hidden schedule key to program the Morning, Day, Evening and Night schedules.
Press the hidden clock key to set the time of day and weekday.
Press the hidden Message key when blinking to display the equipment alert messages.
Press the hidden Lock key when the Lock feature is enabled to lock or unlock the keys using the 2-digit code.
When in a menu setup, this MODE button is blank and is used as a Cancel button.
Filter, HumPad or UV Bulb will blink when service is required. Press the hidden key area to reset the service timers after servicing the equipment.
MornDay EveNight
Temp Hold Schedule
Mo Tu We Th Fr Sa Su
Message Option
18:88 PM AM
Zone Home
88.5
FrAir RH%
Heat Cool Set To
Com
AuxHeat
Clean
Vacant
Locked
88.8
Inside
Outside
RH%
Filter
HumPad
UV Bulb
OFF
HEAT
EmHeat
COOL
AUTO
SYSTEM
AUTO ON
FAN
MENU
MODE
NEXT
ENTER

*Humidity Features only available with the TSTBT4H2CPHM--A model and the TSTBT4H2CPHMW-A model.

FEATURES OF THE TRANSMITTING AND RECEIVING MODULE (TRM)

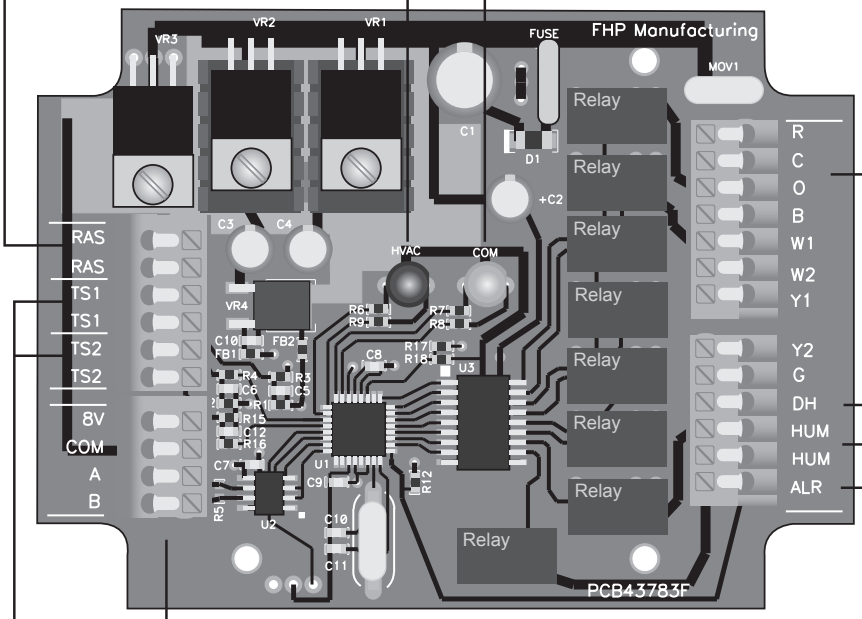
Mercury Notice: All Bosch thermostats are mercury free. However, if the product you are replacing contains mercury, dispose of it properly. Your local waste management authority can give you instructions on recycling.

Features, Receiving Module

Optional Return Air Temperature Sensor
If communication is lost between the Receiving Module and Thermostat for 10 minutes, the sensor is used to control the space temperature.

HVAC Status
Red if heating call, blinks during second stage heating call.
Yellow if cooling call, blinks during second stage cooling call.
Green if fan call.

Communication Status
Blinks green during Modbus communication with thermostat and turns red if communication with thermostat fails 10 times.



HVAC Control
Terminals can be configured for conventional or dual fuel heat pumps or gas/electric systems.

Modbus Thermostat Communication
A 4-wire thermostat cable between the Receiving Module and the Thermostat provides Modbus communication using RS485.

Equipment Monitor
The PDU terminal is used to monitor Bosch equipment and indicate any alert messages at the Thermostat.

Humidifier Control
These terminals are used to control a humidifier.

Optional Temperature Sensors
TS1 and TS2 can be used to monitor dis-charge air temperature, outdoor temperature or can be used as remote space temperature sensors. See Installer options 13 and 14.

De-Humidication Control
The HUM terminal can be used to control de-humidification using the cooling or hot gas reheat.

INSTALLING THE TSTBT4H2CP THERMOSTAT SERIES

A trained, experienced technician must install this product. Carefully read these instructions. You could damage this product or cause a hazardous condition if you fail to follow these instructions. See the product specifications at the end of this manual prior to installing.

WALL LOCATIONS

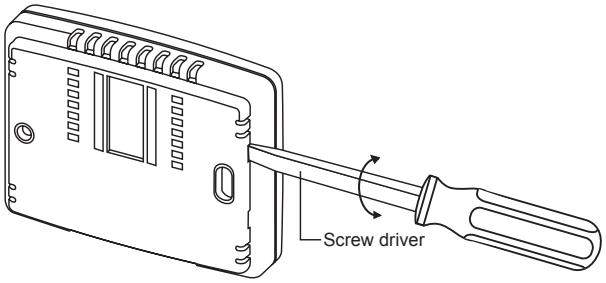
Do not install thermostats in locations that are:

- On an exterior Wall
- In direct sunlight
- Where there may be concealed chimneys or pipes behind the wall
- Close to a window or door leading outside
- Close to objects radiating heat such as fire places, lighting, space radiators, or any other applicance
- In areas that do not require conditioning
- In dead spots or where drafts can occur (behind doors or in corners)
- Close to hot or cold air ducts

Pick an installation location that is easy for the user to access. The temperature of the location should be representative of the building.

Mounting the Thermostat

First, separate the thermostat and sub-base using a flat blade screw driver as shown below.

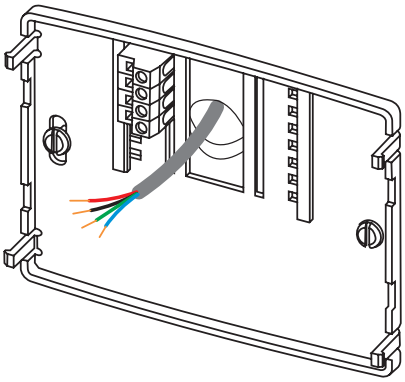


Rotate the screw driver tip so the thermostat separates from the sub-base and then pull the thermostat away from the sub-base.

Align the 4 tabs on the subbase with corresponding slots on the back of the thermostat or base module. Then push gently until the thermostat or base module.

To insure a solid fit between the thermostat and the subbase:

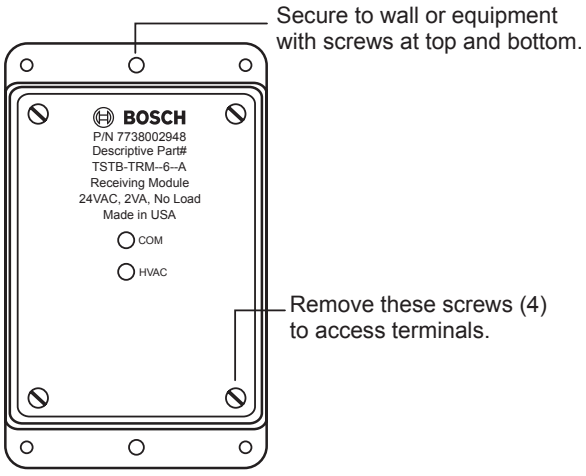
1. *Mount subbase to a flat wall*
2. *Use screws provided*
3. *Drywall anchors should be flush with the wall*
4. *Wires should be pushed into the wall*



INSTALLING THE TRM RECEIVING MODULE

TRM stands for Transmitting and Receiving Module. The TRM communicates with the TSTBT4H2CP Thermostat Series using the MODBUS protocol and then translates the MODBUS protocol to pulses and relays these signals to the HVAC equipment.

The Receiving Module can be installed adjcent to or within the HVAC equipment.



There are two LED lights on the TRM. One is the COM light which blinks green when communication is happening between the TRM and the thermostat. This light will normally blink about every 10 seconds as the thermostat and TRM are in constant communication for status updates. If communication is lost for more than 10 minutes, the COM LED will become red. A certified licensed technician should be called to service the system if this occurs.

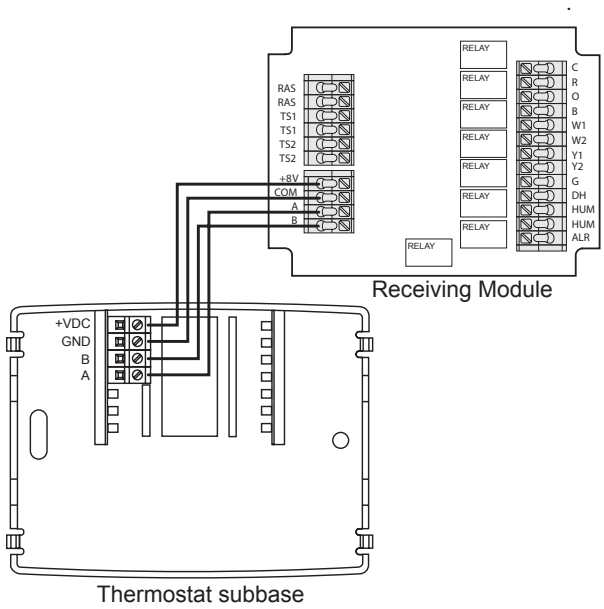
The other LED is labeled HVAC. This light indicates if the unit is actively heating or cooling. If the unit is cooling, then the LED is yellow, if the unit is in heating, then the LED is red. If the thermostat is satisfied, then the LED if off.

WIRING THE THERMOSTAT AND RECEIVING MODULE

The thermostat is wired to the Receiving module using 4-conductor, 18–22 gage thermostat wire. Wire the thermostat and Receiving modules as shown below.

Do not run unshielded wire parallel with 115V or higher voltage wiring for any significant length. This could interfere with the communication. Use shielded wire if the thermostat communication wiring is adjacent to higher voltage wiring.

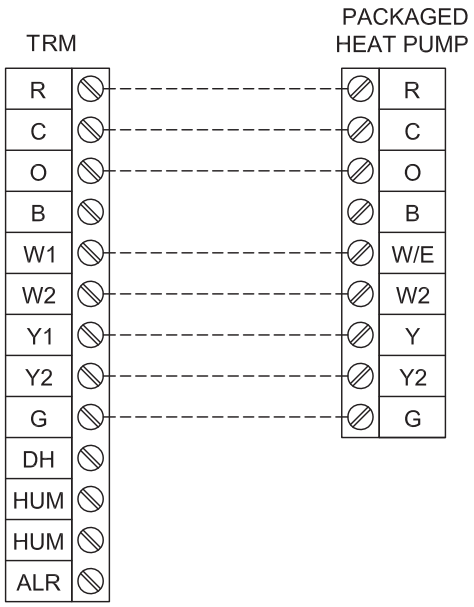
Thermostat Terminal	Receiving Terminal Terminal	Function
+VDC	+8V	Powers the Thermostat
GND	COM	Power Common
A	A	RS485 Modbus Signal
B	B	RS485 Modbus Signal



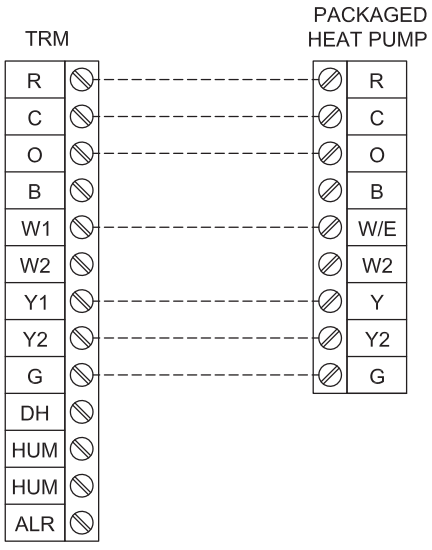
Ensure that the wires are seated completely and neatly into the terminal connections of the TRM and the back mounting plate of the thermostat. Trim any loose wire strands to ensure wire strands cannot touch; potentially creating a short and resetting the thermostat.

WIRING DIAGRAMS

4H/2C - HEAT PUMP

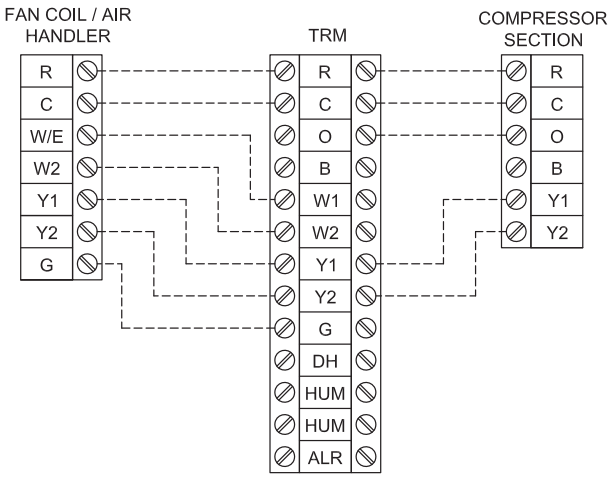


3H/2C - HEAT PUMP

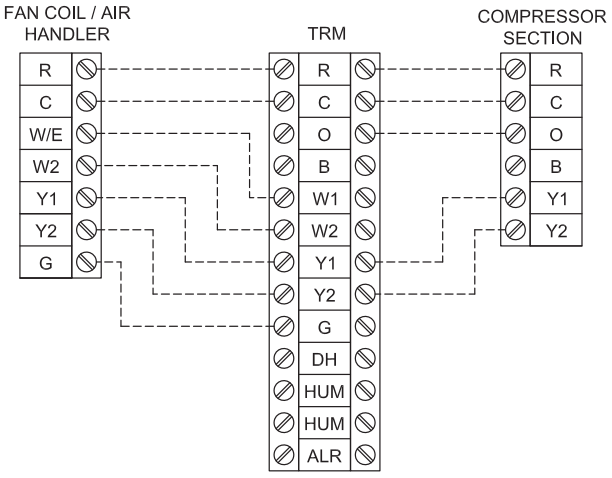


WIRING DIAGRAMS

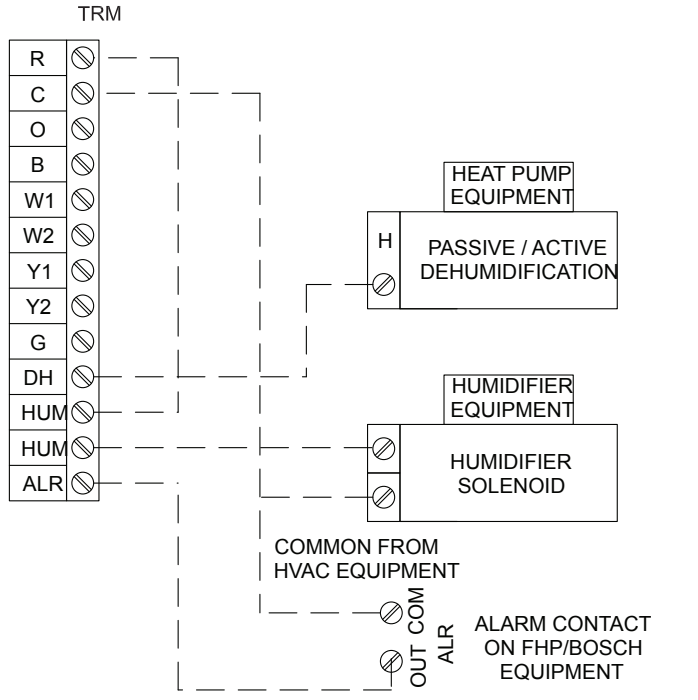
4H/2C - SPLIT HEAT PUMP



4H/2C - SPLIT HEAT PUMP



UNIT WITH ACTIVE OR PASSIVE DEHUMIDIFICATION AND HUMIDIFICATION



* HUMIDIFICATION AND DEHUMIDIFICATION FEATURES ARE ONLY AVAILABLE WITH TSTBT4H2CPHM--A

Terminal Designations on the TSTBT4H2CP Thermostat Series			
	3 Heat / 2 Cool Conventional System	3 Heat / 2 Cool Heat Pump System	4 Heat / 2 Cool Heat Pump System
C	24 Volt Common	24 Volt Common	24 Volt Common
R	24 Volt Power	24 Volt Power	24 Volt Power
O	Energized in Cooling	Energize Reversing Valve in Cooling	Energize Reversing Valve in Cooling
B	Energized in Heating	Energize Reversing Valve in Heating	Energize Reversing Valve in Heating
W1	Heating - 1st Stage Aux	Heating - 1st Stage Aux	Heating - 1st Stage Aux / Emergency Heat
W2	Heating - 2nd Stage Aux	Emergency Heat Relay	Heating - 2nd Stage Aux
Y1	Compressor - 1st Stage Cooling	Compressor - 1st Stage Heating/Cooling	Compressor - 1st Stage Heating/Cooling
Y2	Compressor - 2nd Stage Cooling	Compressor - 2nd Stage Heating/Cooling	Compressor - 2nd Stage Cooling
G	Fan Relay	Fan Relay	Fan Relay
DH	"Cool to Dehumidify Relay (Cooling Mode Only)"	“Cool to Dehumidify Relay (Cooling Mode Only)”	“Cool to Dehumidify Relay (Cooling Mode Only)”
HUM	"Humidifier Contact Relay (Dry Contact-Heating Mode Only)”	“Humidifier Contact Relay (Dry Contact-Heating Mode Only)”	“Humidifier Contact Relay (Dry Contact-Heating Mode Only)”
HUM	“Humidifier Contact Relay (Dry Contact-Heating Mode Only)”	“Humidifier Contact Relay (Dry Contact-Heating Mode Only)”	“Humidifier Contact Relay (Dry Contact-Heating Mode Only)”
ALR	This terminal is used only for Bosch / Florida Heat Pump Equipment. This connection is used for fault code communication from the UPM board in the heat pump. The fault type being transmitted will be displayed on the thermostat. Do not use with any other equipment.		

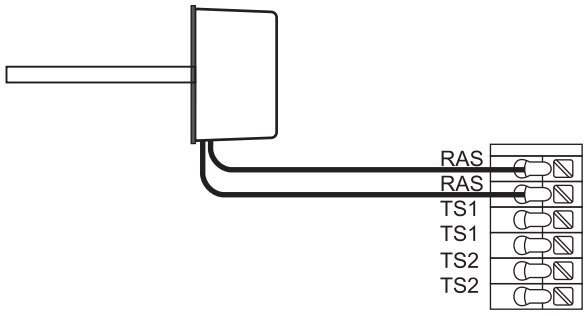
TSTBT4H2CP Thermostat Series Wiring Notes: *Bosch Water Source Heat Pumps utilize “O” type reversing valve operation. If your heat pump utilizes “B” type reversing valve operation, substitute the wiring for the “O” terminals for “B”.*

TEMPERATURE SENSOR CONNECTIONS

ZONB-LAS---M--A Return Air Temperature Sensor

Optionally, a temperature sensor can be installed in the return air duct. This sensor is automatically detected by the TRM and used to control the equipment should the communication between the thermostat and TRM fail. This insures the indoor temperature does not drop below 55°F or rise above 85°F.

Use AWG 18–22 thermostat wire to connect the sensors to the TRM.



TS1 AND TS2

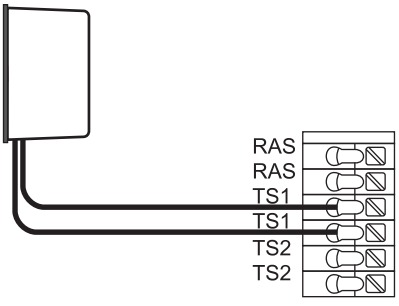
Temperature sensor 1 and Temperature sensor 2 inputs on the TRM can be configured in the thermostat setup menu as an outdoor temperature sensor, a leaving air temperature sensor, or as a remote room temperature sensor.

Either TS1 or TS2 can be designated as the outside air temperature sensor, however once one of the input sensors are designated as the outdoor temperature sensor, the option will not be available for the other sensor input in the menu setup. The same logic applies for the leaving air temp. You cannot have two sensor inputs designated as outdoor temperature or leaving air temp.

For the remote room temperature sensor function, either TS1 or TS2 can be desingnated or both can. Two remote room temp sensors are allowed.

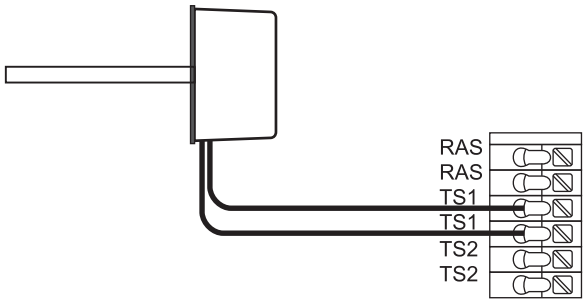
TS1 Used as Outdoor Temperature Sensor

An outdoor temperature sensor is required for dual fuel heal pumps and for automatic emergency heat activation in cold weather. The sensor should be installed under the eves and in the shade.



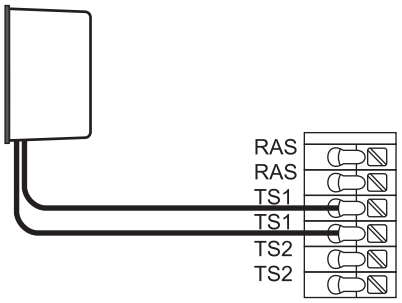
TS1 Used as Leaving Air Temperature Sensor

A sensor can be installed in the supply duel to monitor the Leaving air temperature for monitoring equipment performance. The stainless steel tube should inserted in the duct down stream from the plenum.

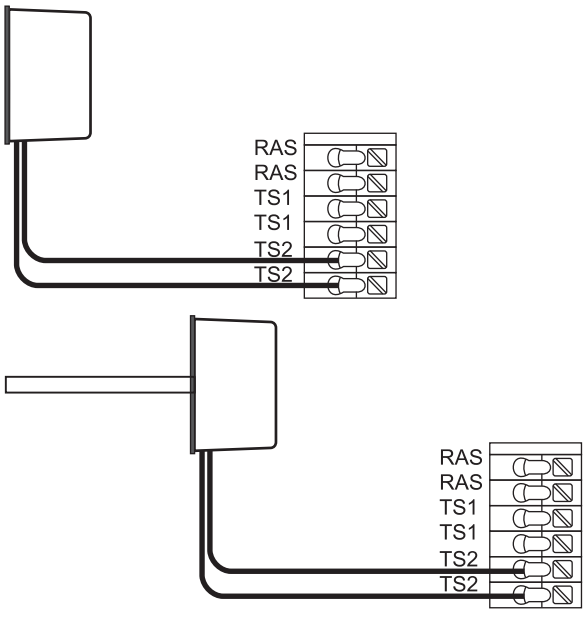


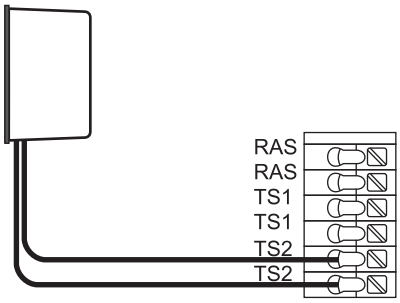
TS1 Used as a Remote Space Temperature Sensor

A sensor can be installed in a remote location, such as the second floor, and the temperature at the remote sensor will be averaged with the sensor in the thermostat when controlling the heating and cooling.



TS2 Temperature Sensor #2



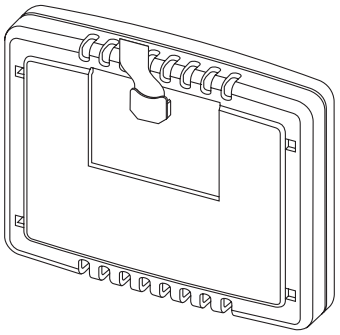


When both TS 1 and TS2 are used as remote space temperature sensors, both sensor readings will be averaged with the thermostat sensor reading.

See the available accessories at the end of this manual for compatibility, part numbers and descriptions for ordering.

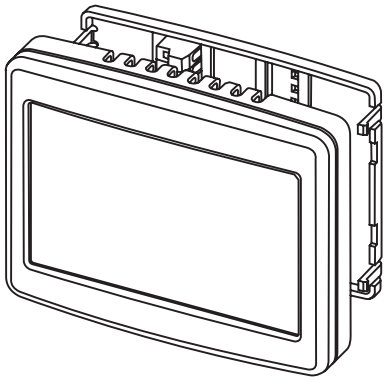
REMOVE THE BATTERY TAB

The TSTBT4H2CP-M--A Thermostat Series has a coin cell battery for maintaining the clock, schedules, and user settings during power outages. After the wiring of the installation, remove the battery tab. Do not remove the tab until the Receiving Module, Thermostat and equipment wiring is complete.



INSTALL THE THERMOSTAT ON THE SUB-BASE

Align the four prongs on the sub-base with the square holes in the thermostat back cover and push the thermostat onto the sub-base until it locks in place.



TECH SETUP FEATURES

Navigating Through Setup Menu

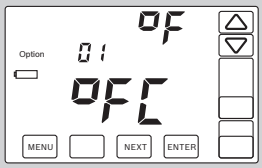
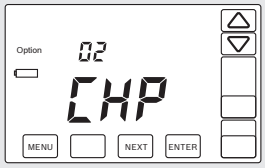
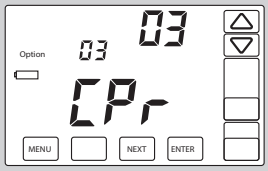
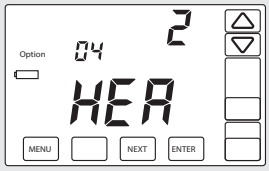
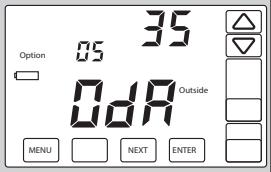
To access the installer menu, press and hold the **ENTER** button for 4 seconds until the first feature appears.

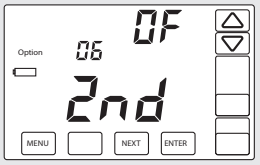
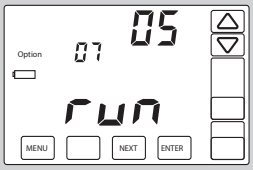
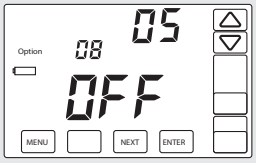
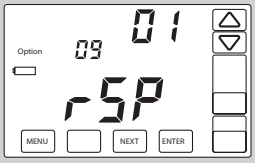
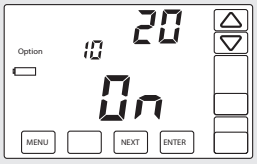
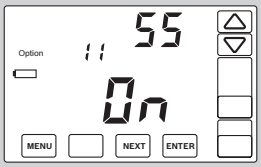
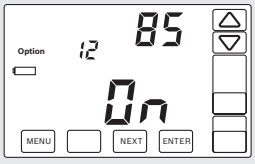
Some options will not be displayed if they cannot be used for the particular equipment type that is selected (Option #2) or that the option is automatically controlled by the equipment or zoning panel (if applicable). Table 4 below shows which options are set by the installer, the zoning panel, or automatically set by the equipment.

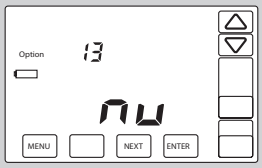
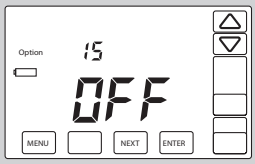
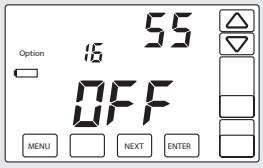
Enter the installer menu by holding **ENTER** for 4 seconds; the buttons perform the following functions:

- The **MENU** button proceeds to the next menu item.
- The blank button is a **CANCEL** button. Push this button to exit the menu setup and discard the last change made. The blank button can be pressed at any time during the setup process to exit.
- The **NEXT** button cycles through the available options for that particular menu feature.
- Once you have chosen the option using the **NEXT** button, if there are options for that setting, use the △ or ▽ button to cycle through the available options. See Tech Setup Table below for a list of available options.
- The **ENTER** button will save the settings and exit the menu setup to home screen. The **ENTER** button can be pressed at any time during the setup process to exit.

TECH SETUP MENU

Option Number	Option Title	Option Description	LCD will Show	Adjustment Options	Factory Default Settings
1	**Select Degees C or F**	Range: °F or °C		Use the Up and Down keys to select °F or °C. Press the MENU key to go to the next option.	°F
2	**Type of Equipment**	Range: Gas/electric, conventional heat pump, dual fuel heat pump and air conditioner only		Use the NEXT key to sequence through the equipment selections. Press the MENU key to go to the next option. Select GE for gas/electric equipment. Select CHP for conventional heat pump. Select dHP for dual fuel heat pump. Select AC for air conditioner only.	CHP
3	**Compressor Configuration**	Range: 1, 2 or 3		Use the Up and Down keys to select the compressor configuration. Press the MENU key to go to the next option. Configuration 1 is one compressor, single stage. Configuration 2 is two compressors, 2 stages. Configuration 3 is one compressor with two stages.	03
4	**Number of Heating Stages** This option is skipped for A/C equipment.	Range: 0,1 or 2		Use the Up and Down keys to select the number of heating stages in a Gas/Electric system or the number of auxiliary heating stages in a heat pump. Press the MENU key for the next option.	2
5	**Outdoor Temperature for Auxiliary Heating Changeover** This option only for dual fuel heat pumps.	Range: 17 to 60F		This option provides automatic changeover to fossil fuel heating in a dual fuel heat pump. Use the Up and Down keys to select the outdoor temperature to switch to fossil fuel heating. Press the MENU key to go to the next option.	OFF

Option Number	Option Title	Option Description	LCD will Show	Adjustment Options	Factory Default Settings
6	**Second Stage Latching**	Range: On or Off		Selects whether second stage is latched on once it is called. Use the Up and Down keys to select On or Off. Press the MENU key to go to the next option. Select On for On or OF for Off.	OFF
7	**Minimum Run Time**	Range: 0 to 9 minutes. Minimum run time is the number of minutes the thermostat will call for heating or cooling to insure a comfortable cycling rate. Setting the System to Off or the opposite system will override the timer and immediately terminate the heating or cooling call.		Use the Up and Down keys to select the minimum run time in minutes. Press the MENU key to go to the next option.	5 Min
8	**Minimum Off Time**	Range: 0 to 9 minutes. The minimum off time is the number of minutes after a call and before a new heating or cooling call can be initiated.		Use the Up and Down keys to select the minimum compressor OFF time in minutes. Press the MENU key to go to the next option.	5 Min
9	**Staging Response**	Range: 1 or 2 Response 1: Stages at 1.0F. Response 2: Stages at 1.5F Staging response determines how the thermostat stages heating or cooling calls based on the difference in space temperature, setpoint temperature the staging differential (1.0oF or 1.5oF).		Use the Up and Down keys to select how staging responds to the temperature difference between setpoint and space temperatures. One(1) is the fastest response and tw0(2) is the slowest to respond. Press the MENU key to go to the next option	1
10	**Automatic Timer Upstaging**	Range: 1 to 99 minutes. The Upstaging Timer automatically up stages the heating or cooling after the thermostat has been continuously calling for a time equal to the selected time limit, The timer will not upstage heating or cooling if the indoor temperature is within one degree of setpoint.		Use the NEXT key to turn automatic upstaging On or Off. Use the Up and Down keys to select how long a call must be present before automatically upstaging. Press the MENU key to go to the next option.	ON 20 Min
11	**Low Space Temperature Monitor** This option is skipped for A/C equipment.	Range: 40 to 60F		Use the NEXT key to select if the Low Room Temperature monitor is On or Off. Use the Up and Down keys to select the low temperature limit. If the space temperature drops below the limit, the thermostat will make a call for heating even if the System is in Off or Cool. Press the MENU key for the next option.	On 55 °F
12	**High Space Temperature Monitor**	Range: 80 to 99F		Use the NEXT key to select if the High room temperature monitor is On or Off. Use the Up and Down keys to select the high temperature limit. If the space temperature rises above the limit, the thermostat will make a call for cooling even if the System is in Off or Heat. Press the MENU key for the next option. Options 28 and 29 control how fast the thermostat can upstage a heating or cooling call.	On 85 °F

Option Number	Option Title	Option Description	LCD will Show	Adjustment Options	Factory Default Settings
13	**Function of TS1 Temperature Sensor** If the equipment selected is dual fuel heat pump, TS1 is set to an Outdoor temperature sensor and this option is skipped.	Range: Not used, Outdoor, leaving air or remote space temperature sensor.		Use the NEXT key to select the function of TS1 temperature sensor. Press the MENU key to go to the next option. Select Out TS1 is outdoor temperature sensor. Select dAt TS1 is discharge air temperature sensor. Select rrt TS1 is remote temperature sensor. Internal thermostat sensor and remote sensor are averaged. Select nu TS1 is not used.	Not Used
14	**Function of TS2 Temperature Sensor**	Range: Not used, Outdoor, leaving air or remote space temperature sensor.		Use the NEXT key to select the function of TS2 temperature sensor. Press the MENU key to go to the next option. Selections are outdoor sensor, discharge air sensor, remote sensor or not used.	Not Used
15	**Humidifier Control** This option is skipped for A/C equipment.	Range: On or Off When used with the Receiving Module, this option can control a humidifier connected to the HUM terminals. The humidifier will only be activated during a heating call.		Use the NEXT key to select the function of the accessory relay. Press the MENU key to go to the next option.	Off
16	**Automatic Limit of Auxiliary Heating in Moderate Outdoor Temperatures.** This option is skipped for A/C equipment. This option requires an outdoor temperature sensor in TS1 or TS2 and will be skipped if not installed.	Range: 50 to 65F In a conventional heat pump, this option automatically limits the use of electrical strip heating in moderate temperatures.		Use the NEXT key to select if the option is On or Off. Use the Up and Down keys to select the outdoor temperature for inhibiting electric strip heating. Press the MENU key to go to the next option.	Off 55° F

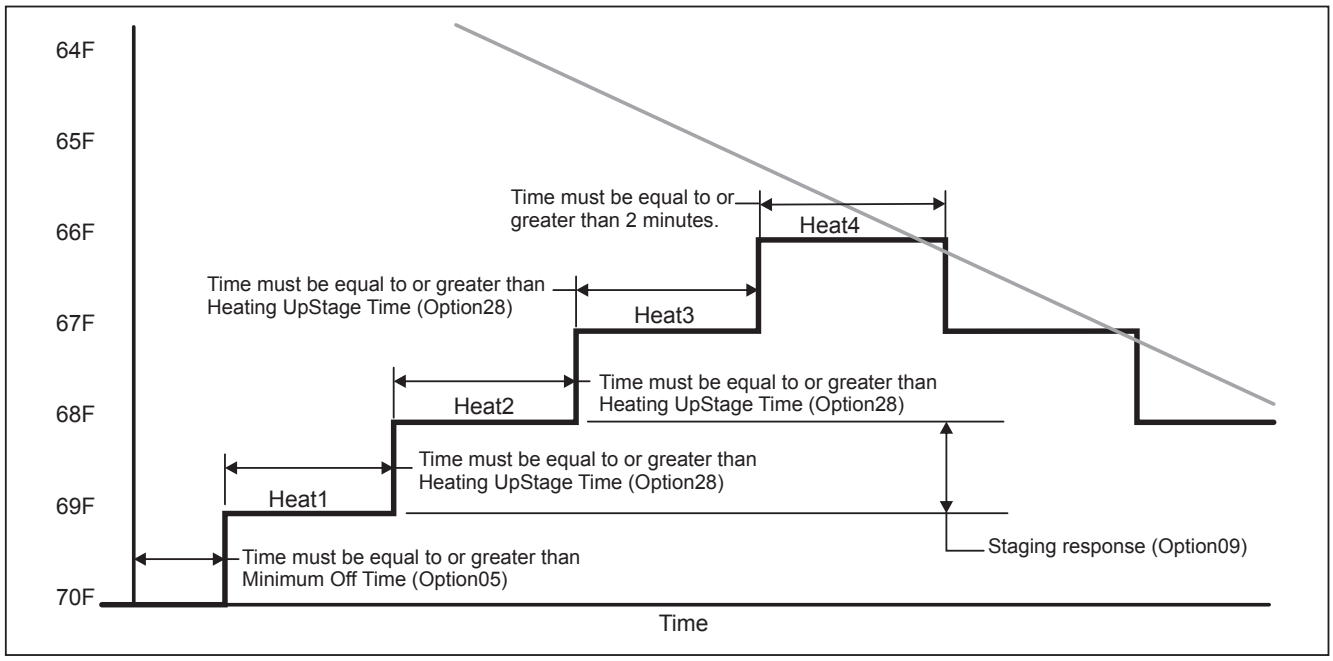
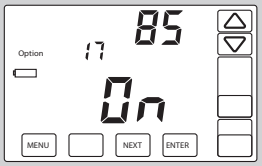
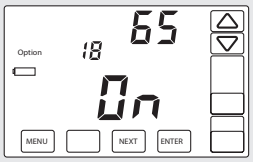
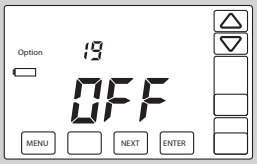
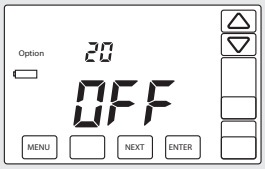
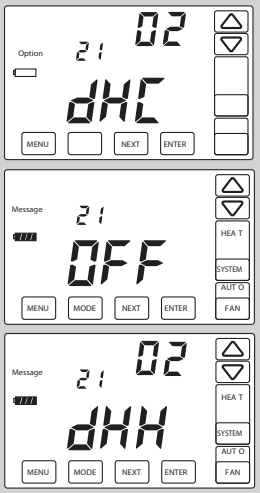
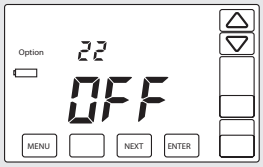
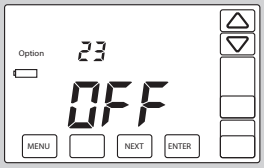
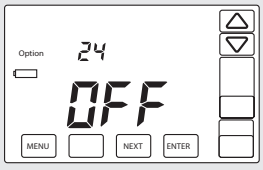
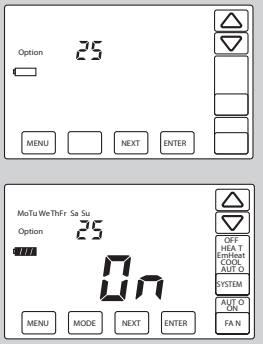
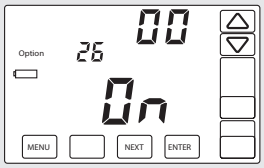
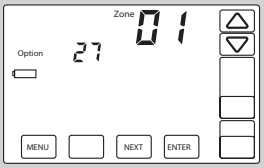
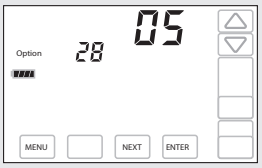
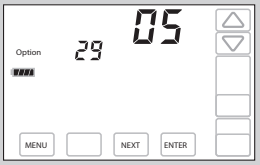
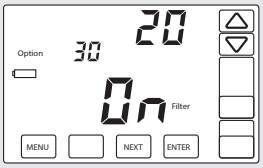
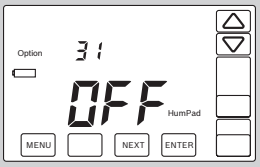
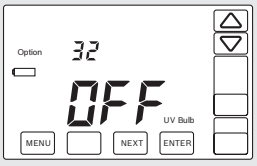
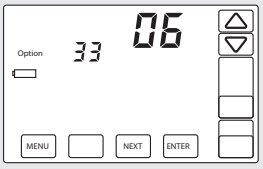

64F
65F
66F
67F
68F
69F
70F
Time must be equal to or greater than 2 minutes.
Heat4
Time must be equal to or greater than Heating UpStage Time (Option28)
Heat3
Heat2
Time must be equal to or greater than Heating UpStage Time (Option28)
Time must be equal to or greater than Heating UpStage Time (Option28)
Heat1
Staging response (Option09)
Time must be equal to or greater than Minimum Off Time (Option05)
Time

Figure 1. Typical staging after a heating setback. X= sequential number

Option Number	Option Title	Option Description	LCD will Show	Adjustment Options	Factory Default Settings
17	**Maximum Heating Set point** This option is skipped for A/C equipment.	Range: 50 to 85F Option controls the maximum temperature that can be set in heating.		Use the NEXT key to select if the Maximum Heating Setpoint limit is On or Off. Use the Up and Down keys to select the highest allowable heating setpoint temperature. Press the MENU key to go to the next option.	On 85 °F
18	**Minimum Cooling Set point**	Range: 50 to 85F Option sets the minimum temperature that can be set in cooling.		Use the NEXT key to select if the Minimum Cooling Setpoint limit is On or Off. Use the Up and Down keys to select the lowest allowable cooling setpoint temperature. Press the MENU key to go to the next option.	On 65 °F
19	**Heating Equipment Monitor** This option is skipped for A/C equipment.	Range: 10 to 50F Monitors the discharge air temperature (sensor is required) and displays a Message if the differential between the discharge air temperature and the space temperature drops below the limit set.		Use the NEXT key to select if the Heating Equipment Monitor is On or Off. If On, use the Up and Down keys to select the minimum temperature differential between the discharge temperature and the calling space temperature after calling continuously for 5 minutes. Press the MENU key to go to the next option.	Off
20	**Cooling Equipment Monitor**	Range: 10 to 50F Monitors the discharge air temperature (sensor is required) and displays a Message if the differential between the discharge air temperature and the space temperature drops below the limit set.		Adjust the temp range that the heating Use the NEXT key to select if the Cooling Equipment Monitor is On or Off. If On, use the Up and Down keys to select the minimum temperature differential between the discharge temperature and the calling space temperature after calling continuously for 5 minutes. Press the MENU key to go to the next option.	Off

Option Number	Option Title	Option Description	LCD will Show	Adjustment Options	Factory Default Settings
21	**De-Humidification Control**	Range: Off, de-humidify using cooling or de-humidfy using hot gas. Over Cooling Range: 2 to 5F, 1 to 3C		De-humidification will only occur after a cooling call. Use the NEXT key to select de-humidification using cooling, dehumidification using hot gas re-heat or de-humidifaction Off. Use the Up and Down keys to select the number of degrees of over-cooling allowed. Press the MENU key to go to the next option.	Cool to de-humidify 2F maximum over-cool
22	**De-Humidification Re-Heat** This option is skipped for A/C equipment.	Range: On or Off		If the equipment selected is a conventional heat pump with auxiliary heating and, cooling is selected for dehimidification, use the NEXT key to select if reheat is allowed during dehumidification is On or Off when the overcooling limit is reached. Press the MENU key to go to the next option.	Off
23	**Fan On Delay in Heating** This option is skipped for A/C equipment.	Range: On or Off, 20 to 120 seconds. Delays turning on the indoor fan to allow the discharge air temperature to be heated.		Use the NEXT key to select if the fan delay in a heating call is On or Off. If On, use the Up and Down keys to select the delay time in seconds. Press the MENU key to go to the next option.	Off 60 seconds
24	**Fan On Delay in Cooling**	Range: On or Off, 20 to 120 seconds. Delays turning on the indoor fan to allow the discharge air temperature to cool.		Use the NEXT key to select if the fan delay in a cooling call is On or Off. If On, use the Up and Down keys to select the delay time in seconds. Press the MENU key to go to the next option.	Off 60 second
25	**Fan On During Daytime Schedule**	Range: On or Off Any days of the week.		Use the NEXT key to select if the fan is On or Off during the Daytime schedule. If Daytime Fan operation is OFF, press the MENU key to go to the next option. If Daytime Fan operation is On, press the MENU key to select the days the fan is to operate during the Daytime schedule. If the Fan is On during the Daytime schedule, use the NEXT key to select the weekday and use the Up or Down key to select or de-select that weekday. Press the MENU key to go to the next option. The weekday number is also displayed to the right.	Off Monday thru Sunday
26	**Thermostat Keys Locking**	Range: On or Off, #00 to 99		Use the NEXT key to select if the thermostat key locking is On or Off. If On, use Up and Down keys to select a lock combination from 1 to 99. Press the MENU key to go to the next option.	Off Off, Lock# 00

Option Number	Option Title	Option Description	LCD will Show	Adjustment Options	Factory Default Settings
27	**Zone Number**	Range: 1 to 7.		This option is skipped if the thermostat is wired to a Receiving Module. If the thermostat is used with a zoning panel, use the Up and Down keys to select the Zone number. Press the MENU key to go to the next option.	1
28	**Heating Upstage Time**	Range: 0 to 30 minutes This option controls how quickly the thermostat can upstage heating calls when the temperature differential and staging response justifies upstaging.		Use the Up/Down keys to set the upstage time limit. Press the MENU key to go to the next option.	5 minutes
29	**Cooling Upstage Time**	Range: 0 to 30 minutes This option controls how quickly the thermostat can upstage cooling calls when the temperature differential and staging response justifies upstaging.		Use the Up/Down keys to set the upstage time limit. Press the MENU key to go to the next option.	5 minutes
30	**Filter Monitor**	Range: On or Off. 100(1) to 8600(86) hours.		Use the NEXT key to select if the Filter Monitor is On or Off. If On, use the Up and Down keys select the filter cleaning or replacement hours (in 100s of hours). Press the MENU key to go to the next option.	On 2000(20) hours
31	Humidifier Pad Monitor This option is skipped for A/C equipment.	Range: On or Off. 100 to 8600(86) hours.		Use the NEXT key to select if the Humidifier Pad Monitor is On or Off. If On, use the Up and Down keys select the replacement hours (in 100s of hours). Press the MENU key to go to the next option.	Off 8600(86) hours.
32	**UV Bulb Monitor**	Range: On or Off. 100 to 8600(86) hours.		Use **NEXT** button to cycle through the available Use the NEXT key to select if the UV Bulb Monitor is On or Off. If On, use the Up and Down keys select the replacement hours (in 100s of hours). Press the MENU key to go to the next option.	Off 8600(86) hours.
33	**LCD Contrast**	Range: 1 to 10		Use the Up/Down keys to set the LCD contrast. The LCD will change as the contrast setting is changed.	6

TECH MENU SETUP EXPLANATIONS

Option	Option Description	Adjustment
Option 1: **Temperature Scale**	This feature establishes the temperature scale to be used and (°F or °C).	1. Push △ or ▽ to select the desired temperature scale that is displayed in the upper right hand corner. 2. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup.
Option 2: **Equipment Type**	This feature establishes the type of equipment that you want to control.	1. Push **NEXT** to select the appropriate equipment type. • Gas/Electric - This equipment type is an Air Conditioner with Electric Heat Strips or Gas Furance with duct cooling coil. • CHP - Conventional Heat Pump - This equipment type is a typical heat pump that utilizes compressor capacity for heating and cooling with supplemental electric or gas heat. • dHP - Dual Fuel Heat Pump - This equipment type is a Heat Pump that will utilize compressor heat until there is no longer sufficient capacity and switches over to gas or oil fuel heating. • AC - Air Conditioner- Cooling only, heating stage not available. 2. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup.
Option 3: **Number of Compressors**	This feature establishes the number of compressors that the equipment is using.	1. Push △ or ▽ to select the number of compressors (or speeds if the unit has a two stage compressor). 2. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup. *If the unit utilizes a single, two speed compressor, this feature must be set to 3.*
Option 4: **Number of Heating Stages**	This feature establishes the number of heating stages if a Gas/Electric equipment is installed or number of auxiliary heating stages if a heat pump is installed. The available options for number of stages are: 0, 1, and 2.	1. Push △ or ▽ to select the number of heating stages. 2. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup.
Option 5: **Outdoor Temperature for Auxiliary Heating Changeover**	This feature establishes the outdoor temperature at which an automatic changeover will occur from compressor heat to fossil fuel in the case of a dual fuel heat pump or an automatic changeover to electric heat with a conventional heat pump.	1. Push △ or ▽ to select the temperature at which the automatic changeover will occur. 2. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup. *An outdoor temperature sensor is needed for this feature to function. See Menu Options 13 or 14 for instructions on setting up an outdoor temperature sensor in the thermostat.*
Option 6: **Second Stage Latching**	This feature establishes how the HVAC equipment will stage down. If the unit possess multiple stages of heating or cooling, the ability of controlling the stage down process can be beneficial. With this feature enabled, once the set point is met, the thermostat will stage down to the previous stage. After a time period that is determined by Menu Option #10, if the set point is still satisfied, the thermostat will stage down once again. If Second Stage Latching is disabled, once the set point has been satisfied, all stages will be turned off and the thermostat will go into standby mode.	1. Push △ or ▽ to enable by choosing "ON" or disable by choosing "OFF". 2. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup. *Menu Option #9 (Staging Response) and Menu Option #10 (Automatic Timer Upstaging) must be configured for this feature to function correctly.*

Option	Option Description	Adjustment
Option 7: **Minimum Run Time**	This feature establishes the minimum allowable run time for the compressor. The minimum run time prevents short run time and lengthens the life of the compressor. The compressor will continue to run for the specified number of minutes even if the set point has been satisfied.	1. Push △ or ▽ to select the minimum number of minutes that the compressor will run. 2. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup.
Option 8: **Minimum Off Time**	This feature establishes the number of minutes that must pass between compressor cycles. The minimum run time prevents short cycling from occurring and will lengthen the life of the compressor. The compressor will remain off for the specified number of minutes from its last operation even if the set point is not satisfied.	1. Push △ or ▽ to select the minimum number of minutes that the compressor will remain off after its last operation. 2. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup.
Option 9: **Staging Response**	This feature establishes the temperature differential at which staging occurs. This is basically the sensitivity that will be established when trying to maintain the space set point. Utilizing this feature allows the user to control when staging occurs depending on the temperature difference between the set point and the space temperature. The staging Response feature is also referred to swing adjustment. See Understanding Swing and Staging Example after the Tech Setup Section	**Response 1**: Stages at 1.0 °F or 0.5 °C **Response 2**: Stages at 1.5 °F or 0.75 °C **Example**: Using Response setting 2 with the unit in heating; one stage of heating is energized and the space temperature is more than 1.5 oF lower than set point, then the thermostat will bring on the next stage of heat. 1. Push △ or ▽ to select the response setting that will dictate when the next stage will be energized. 2. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup. *See UNDERSTANDING SWING AND STAGING section below for further explanation of staging.*
Option 10: **Automatic Timer Upstaging**	This feature establishes the amount of time that passes before another stage of heating or cooling is energized if the set point has not been met.	**Example**: This feature has been set to 10 min and the unit is in cooling. If the space temp has not reached the set point temperature after 10 min from when the previous cooling stage was energized, the thermostat will bring on the next stage. This works exactly the same way in heating. 1. Push **NEXT** to enable by selecting “ON” or disable this feature by selecting “OFF”. 2. Push △ or ▽ to select the number of minutes that will be allowed to pass before the next heating or cooling stage will be energized. 3. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup. *This feature will not bring on the next stage if the space temperature is within 1 °F of the set point regardless of the time that has passed.*

Option	Option Description	Adjustment
Option 11: **Low Space Temperature Monitor**	This feature establishes the minimum space temperature that will be allowed. If the space temperature falls below the established value, the thermostat will bring on the equipment in heating mode; even if the thermostat's operation mode is set to "OFF". The normal heating cycle as determined by all the User Setup Features will be followed (this includes the staging sequence, min run time, min off time).	1. Push **NEXT** to enable by selecting "ON" or disable this feature by selecting "OFF". 2. Push △ or ▽ to select the lowest allowable space temperature. 3. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup.
Option 12: **High Space Temperature Monitor**	This feature establishes the maximum space temperature that will be allowed. If the space temperature rises above the established value, the thermostat will bring on the equipment in cooling mode even if the thermostat's operation mode is set to "OFF". The normal cooling cycle as determined by all the User Setup Features will be followed (this includes the staging sequence, min run time, min off time).	1. Push **NEXT** to enable by selecting "ON" or disable this feature by selecting "OFF". 2. Push △ or ▽ to select the highest allowable space temperature. 3. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup.
Option 13: **Function of TS1 Temperature Sensor**	This feature establishes the function for the TS1 terminal located on the TRM. With optional temperature sensors, the function of this input can be established as outdoor temperature, leaving air temperature off of the coil, or as a remote room temperature sensor.	1. Push **NEXT** to choose the type of temperature sensor input. "nu" stands for "not used" and disables the temperature input functionality. 2. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup. *The function for TS1 and TS2 cannot both be set to function as an outdoor temperature sensor or leaving air temperature sensor. Once TS1 has been established as one of these functions, that option will disappear from the menu for TS2. However, both TS1 & TS2 can be set up as a remote room temperature sensor. If the unit is set up as dual fuel heat pump this sensor defaults to Outdoor Air Temperature sensor*
Option 14: **Function of TS2 Temperature Sensor**	This feature establishes the function for the TS2 terminal located on the TRM. With optional temperature sensors, the function of this input can be established as outdoor temperature, leaving air temperature off of the coil, or as a remote room temperature sensor.	1. Push **NEXT** to choose the type of temperature sensor input. "nu" stands for "not used" and disables the temperature input functionality. 2. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup. *The function for TS1 and TS2 cannot both be set to function as an outdoor temperature sensor or leaving air temperature sensor. Once TS2 has been established as one of these functions, that option will disappear from the menu for TS1. However, both TS1 & TS2 can be set up as a remote room temperature sensor.*

Option	Option Description	Adjustment
Option 15: **Humidifier Function**	This feature enables the use of a humidifier. The TRM has a dedicated set of dry contacts in order to connect the humidifier. The setup technician must set the humidity set point to establish the desired humidity level that should be maintained.	1. Push **NEXT** to enable the humidifier function by choosing “ON” or disabling the humidifier function by choosing “OFF”. 2. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup. *The humidifier will only function while the thermostat is in the heating mode.*
Option 16: **Automatic Limit of Auxiliary Heating in Moderate Outdoor Temperatures**	This feature establishes an outdoor temperature setting that limits the use of auxiliary electric heat with a heat pump. If the outdoor temperature is above a the specified value, then only compressor heat will be utilized; auxiliary electric heat will not be allowed to be energized. Once the outdoor temperature falls below the established value, the compressors will be locked out and only the auxiliary heat will be allowed to function.	1. Push △ or ▽ to select the temperature at which the automatic changeover will occur. 2. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup. *An outdoor temperature sensor is needed for this feature to function. See Menu Options 13 or 14 for instructions on setting up an outdoor temperature sensor in the thermostat.*
Option 17: **Maximum Heating Set point**	This feature establishes the maximum heating set point that the user can choose as a set point.	1. Push **NEXT** to enable by selecting “ON” or disable this feature by selecting “OFF”. 2. Push △ or ▽ to select the highest allowable heating set point temperature. 3. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup.
Option 18: **Minimum Cooling Set point**	This feature establishes the minimum cooling set point that the user can choose as a set point.	1. Push **NEXT** to enable by selecting “ON” or disable this feature by selecting “OFF”. 2. Push △ or ▽ to select the lowest allowable cooling set point temperature. 3. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup.
Option 19: **Heating Equipment Monitor**	This feature helps to establish if the heating equipment is not functioning properly. The thermostat does this by comparing the leaving air temp to the space temperature and the amount of time that has passed from when the heating call was initiated. If 30 minutes has passed and the space temperature is 30 °F or more from the set point temperature, then there might be a problem with the heating equipment. The equipment is not operating at its ideal efficiency.	The thermostat will display “LHO” (Low Heating Output) when this fault is activated. Call a professional technician immediately. 1. Push **NEXT** to enable by selecting “ON” or disable this feature by selecting “OFF”. 2. Push △ or ▽ to select the lowest allowable cooling set point temperature. 3. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup. *This feature requires a leaving air temperature sensor (Bosch P/N: 7738002979). See Option 13 or 14 to set up the leaving air temperature sensor.*

Option	Option Description	Adjustment
Option 20: **Cooling Equipment Monitor**	This feature helps to establish if the cooling equipment is not functioning properly. The thermostat does this by comparing the set point temp to the space temperature and the amount of time that has passed from when the cooling call was initiated. If 30 minutes has passed and the space temperature is 30 °F or more from the set point temperature, then there might be a problem with the cooling equipment. The equipment is not operating at it's ideal efficiency.	The thermostat will display "LCO" (Low Cooling Output) when this fault is activated. Call a professional technician immediately. 1. Push **NEXT** to enable by selecting "ON" or disable this feature by selecting "OFF". 2. Push △ or ▽ to select the lowest allowable cooling set point temperature. 3. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup. *This feature requires a leaving air temperature sensor (Bosch P/N: 7738002979). See Option 13 or 14 to set up the leaving air temperature sensor.*
Option 21: **Dehumidification Control**	This feature allows the ability to enable cool-to-dehumidify functionality or to operate hot gas reheat (if the HVAC equipment is equipped with this feature). The cooling equipment will remain on until the humidity set point is met or the over cooling temperature has been reached. The over cooling temperature is the permissible number of degrees below the set point that the user will allow in an attempt to better dehumidify the space.	Cool to Dehumidify (displayed as dHC) - Once the space temperature has satisfied the set point temperature, then the humidity set point becomes priority and the thermostat will keep the cooling equipment energized in an attempt to continue actively dehumidifying. Hot Gas Reheat (displayed as dHH) - This feature is used in order to attempt to maintain a constant leaving air temperature by utilizing hot gas off of the compressor. Reference the manual for the cooling equipment on how to wire this feature to the thermostat and how it functions. 1. Push **NEXT** to choose the dehumidification control mode: OFF, dHC, or dHH. 2. Push △ or ▽ to select the over cooling temperature difference that will be allowed. 3. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup. *This feature is only available with the TSTBT4H2CPHM--A model.*
Option 22: **Dehumidification Reheat** **(Only available when Option #21 is set to dHC)**	This feature allows the ability to enable cool-to-dehumidify functionality while attempting to maintain a comfortable space temp by reheating. Once the space temperature has satisfied the set point temperature, then the humidity set point becomes priority and the thermostat will keep the cooling equipment energized in an attempt to continue actively dehumidifying. The cooling equipment will remain on until the humidity set point is met. If the over cooling temperature is surpassed, then the electric heat will be energized to reheat the air to stay at or above the over cooling temperature.	1. Push **NEXT** to enable by selecting "ON" or disable this feature by selecting "OFF". 2. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup. *This feature is only available with the TSTBT4H2CPHM--A model.*

Option	Option Description	Adjustment
Option 23: **Fan Delay in Heating**	This feature allows the ability to delay the fan motor from energizing for a specified amount of time while in the heating mode. This is especially helpful on Gas systems; this will allow the burners to get up to temperature before air starts circulating.	1. Push **NEXT** to enable by selecting "ON" or disable this feature by selecting "OFF". 2. Push △ or ▽ to select the number of seconds the fan will be delayed on a heating call. 3. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup.
Option 24: **Fan Delay in Cooling**	This feature allows the ability to delay the fan motor from energizing for a specified amount of time while in the cooling mode.	1. Push **NEXT** to enable by selecting "ON" or disable this feature by selecting "OFF". 2. Push △ or ▽ to select the number of seconds the fan will be delayed on a cooling call. 3. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup.
Option 25: **Fan on During Daytime Schedule**	This feature allows the ability to run the fan motor continuously during the Day Time Schedule time period in order to circulate air for filtration and to keep the air from becoming stale. As the schedules in the thermostat are established, one of the time periods that has to be set is the Day Time Schedule. It is during this time duration that the fan will run continuously, even if there is not a heating or cooling call.	1. Push **NEXT** to enable by selecting "ON" or disable this feature by selecting "OFF". 2. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup.
Option 26: **Thermostat Key Locking**	This feature allows the ability to establish a two digit entry code to lock out unauthorized users from having access to the thermostat features. This is a two digit code starting at 00 and ending at 99.	1. Push **NEXT** to enable by selecting "ON" or disable this feature by selecting "OFF". 2. Push △ or ▽ to select the two digit number code. 3. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup.
Option 27: **Zone Number**	Range: 0 to 30 minutes This option controls how quickly the thermostat can upstage heating calls when the temperature differential and staging response justifies upstaging.	1. Push △ or ▽ to set the upstage time limit. 3. Push **MENU** to go to the next option.
Option 28: **Heating Upstage Time**	This feature allows the thermostat to determine how quick it needs to command the next stage of heating based upon the temperature differential.	The unit will up stage according to the the minimum time as set in this option and the staging response differential as set in option 9 1. Push △ or ▽ to select the minimum time required. 2. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup. *This feature works in conjunction with option 9.*

Option	Option Description	Adjustment
Option 29: **Cooling Upstage Time**	This feature allows the thermostat to determine how quick it needs to command the next stage of cooling based upon the temperature differential.	The unit will up stage according to the the minimum time as set in this option and the staging response differential as set in option 9. 1. Push r or s to select the minimum time required. 2. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup. *This feature works in conjunction with option 9.*
Option 30: **Filter Monitor**	This feature allows the ability to establish the number of hours of operation of the HVAC equipment between filter changes.	1. Push **NEXT** to enable by selecting “ON” or disable this feature by selecting “OFF”. 2. Push △ or ▽ to select the number of hours of operation between filter changes. 3. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup. When the established number of hours has passed, the thermostat will display “Filter” to notify the end user it is time to change the air filter.
Option 31: **Humidifier Pad Monitor**	This feature allows the ability to establish the number of hours of operation of the HVAC equipment between humidifier pad changes.	1. Push **NEXT** to enable by selecting “ON” or disable this feature by selecting “OFF”. 2. Push △ or ▽ to select the number of hours of operation between humidifier pad changes. 3. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup. When the established number of hours has passed, the thermostat will display “HumPad” to notify the end user it is time to change the Humidifier Pad.
Option 32: **UV Bulb Monitor**	This feature allows the ability to establish the number of hours of operation of the HVAC equipment between UV bulb changes.	1. Push **NEXT** to enable by selecting “ON” or disable this feature by selecting “OFF”. 2. Push △ or ▽ to select the number of hours of operation between UV bulb changes. 3. Push **MENU** to go to the next menu feature or **ENTER** to exit menu setup. When the established number of hours has passed, the thermostat will display “UV Bulb” to notify the end user it is time to change the UV Bulb.
Option 33: **LCD Contrast**	Range: 1 to 10	Use the Up/Down keys to set the LCD contrast. The LCD will change as the contrast setting is changed

TSTBT4H2CP Thermostat Series Options Settings				
Option	Option Description	Factory Setting (Default)	Where Option is configured when connected to:	
			TRM	Bosch Zone Panel
1	Degrees C or F	Degrees F	Thermostat	Zone Panel
2	Equipment Type	Conventional HP (CHP)	Thermostat	Zone Panel
3	Number of Compressors	1	Thermostat	Zone Panel
4	Number of Auxiliary Heating	2	Thermostat	Zone Panel
5	Outdoor Temp for Fossil Fuel	Off	Thermostat	Zone Panel
6	Second Stage Latching	Off	Thermostat	Zone Panel
7	Min Run Time (min)	5	Thermostat	Zone Panel
8	Min Compressor Off Time (min)	5	Thermostat	Zone Panel
9	Staging Response	1 1.0 °F	Thermostat	Thermostat
10	Automatic Timer Upstaging Upstage Time (min)	On 10	Thermostat	Thermostat
11	Low Space Temp Monitor Low Space Temp Limit	On 55 °F	Thermostat	Zone Panel
12	High Space Temp Monitor High Space Temp Limit	On 80 °F	Thermostat	Zone Panel
13	TS1 Temp Sensor Function	Not Used	Thermostat	Zone Panel
14	TS2 Temp Sensor Function	Not Used	Thermostat	Zone Panel
15	Humidifier Control *	Off	Thermostat	Zone Panel
16	Automatic Emergency Heat Outdoor Temp for EM Heat	Off	Thermostat	Zone Panel
17	Maximum Heating Setpoint Max heating Setpoint Temp	On 80 °F	Thermostat	Thermostat
18	Minimum Cooling Setpoint Min Cooling Setpoint Temp	On 65 °F	Thermostat	Thermostat
19	Heating Equipment Monitor Heating Differential Temp	Off	Thermostat	Zone Panel
20	Cooling Equipment Monitor Cooling Differential Temp	Off	Thermostat	Zone Panel
21	De-Humidification Control* Degrees Overcooling Allowed	Off Default 2 degrees	Thermostat	Zone Panel
22	Fan Delay on Heating Call Fan Delay (sec)	Off	Thermostat	Zone Panel
23	Fan Delay on Cooling Call Fan Delay (sec)	Off	Thermostat	Zone Panel

24	Fan on during Daytime Schedule Days Fan On during Daytime Schedule	Off	Thermostat	Zone Panel
25	Thermostat Key Lockout Lockout Combination	Off	Thermostat	Zone Panel
26	Thermostat Key Lockout Lockout Combination	Off	Thermostat	Thermostat
27	Zone Number	1	Thermostat	Thermostat
28	Heating Upstage Time	5 Minutes	Thermostat	Thermostat
29	Cooling Upstage Time	5 Minutes	Thermostat	Thermostat
30	Filter Monitor Filter Replacement Hours	On 4,000	Thermostat	Zone Panel
31	Humidifier Pad Monitor Humidifier Pad Replacement Hours	Off	Thermostat	Zone Panel
32	UV Bulb Monitor UV Bulb Replacement Hours	Off	Thermostat	Zone Panel

*Option not available on TSTBT4H2CP-M--A Thermostat model

UNDERSTANDING SWING AND STAGING (OPTION #9 - STAGING RESPONSE)

All Bosch thermostats have adjustable swings

Cycling your HVAC system is a balance between user comfort and equipment efficiency. Equipment wear and tear is also a consideration.

- User comfort is maximized by small swings
- Equipment efficiency is maximized by large swings
- Equipment wear and tear is minimized by large swings
- The ideal swing is one at which the system runs as long and with as few cycles as possible without the homeowner being uncomfortable
- Modern systems are designed to run longer with fewer cycles for best efficiency
- Staging systems are designed to be most efficient on first stage (excluding dual fuel systems)
- Equipment life is reduced by frequent on/off cycles
- The 1st stage energizes at 1x swing, the 2nd stage at 2x swing and the 3rd stage at 3x swing.

Example:

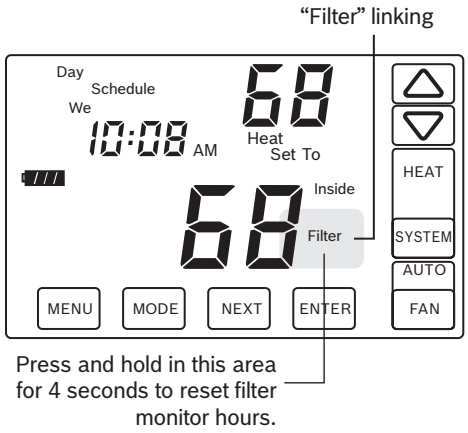
- Thermostat system switch set to heat
- Swing setting is 1°F
- Set point is 70°F

Temp	Actions
71°F	1st Stage Off
70°F	Set point
69°F	1st Stage On / 2nd Stage Off
68°F	2nd Stage On / 3rd Stage Off
67°F	3rd Stage On

The 1st stage will energize at 69°F and turn off at 71°F.
The 2nd stage will energize at 68°F and turn off at 69°F.
The 3rd stage will energize at 67°F and turn off at 68°F.

DISPLAYING AND RESETTING THE SERVICE MESSAGES

The“Filter”,“HumPad”or“UV Bulb”will blink whenever their service hours have exceeded the time interval in 100s of hours for cleaning or replacement. After servicing the filter, humidifier pad or UV bulb, press and hold the key area in gray for 4 seconds to reset the hours.



If multiple flags are blinking, you will have to repeat the process for each flag.

FAULT CODES

The TSTBT4H2CP Thermostat Series communicates with a Florida Heat Pump or Bosch heat pump through the compressor protection module (UPM) board. The UPM communicates fault codes utilizing a combination of pulses. The translating module deciphers these pulses and relays the associated fault to be displayed on the thermostat.

ENABLING FAULT CODE MESSAGES

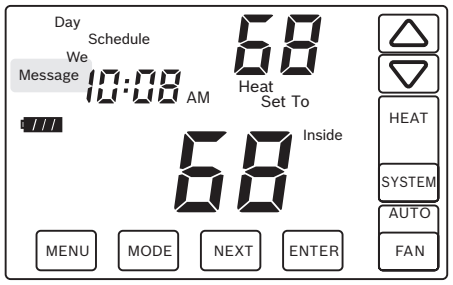
Run a low voltage wire from the ALR-OUT terminal connection on the UPM board to the PDU terminal on the TRM.

This feature is only available with a Florida Heat Pump or Bosch Heat Pump.

See page 8 for wiring diagram.

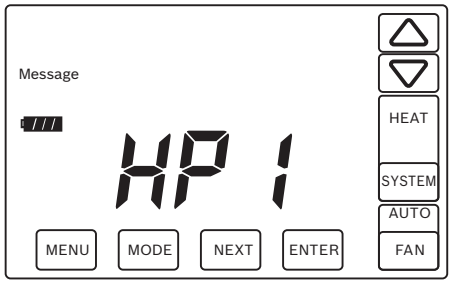
DISPLAYING EQUIPMENT SERVICE MESSAGES

The word“Message”will blink anytime an equipment service message is present. To display the message, Press in the key area shown in gray for 4 seconds.



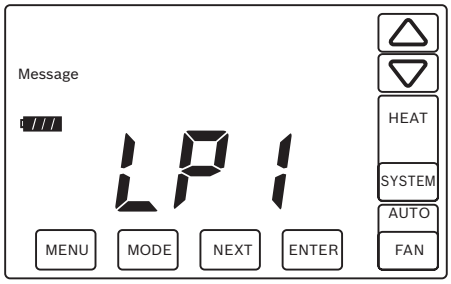
HIGH PRESSURE ALERT

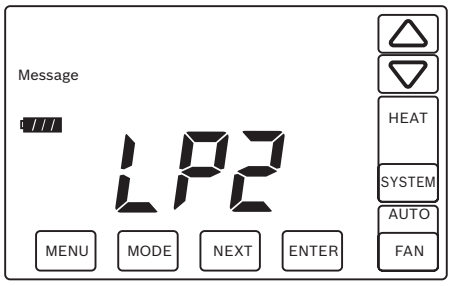
The equipment has detected a high head pressure condition and prohibited heating and cooling calls. Contact your local contractor for service. Press the **ENTER** key to return to normal thermostat display.



LOW PRESSURE ALERT

The equipment has detected a low head pressure condition and prohibited heating and cooling calls. Contact yourlocal contractor for service. Press the **ENTER** key to return to normal thermostat display.





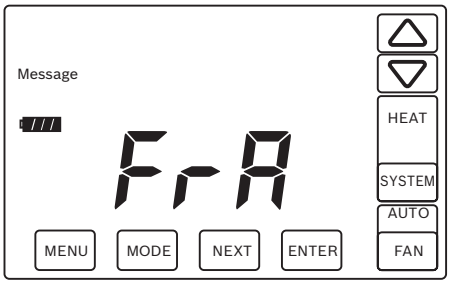
HP & LP faults will indicate whether the fault has occurred on compressor 1 or compressor 2. HP1 is a high pressure fault on compressor 1, LP2 is a low pressure fault on compressor 2

FREEZE CONDITION ALERT

The equipment has detected a freeze condition and prohibited heating and cooling calls.

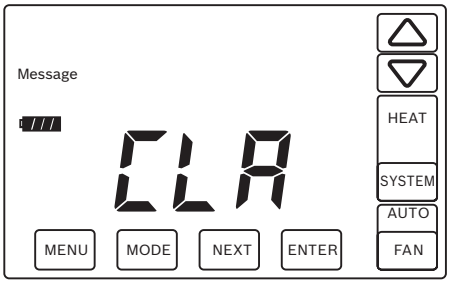
The sensor that has triggered this fault is monitoring the refrigerant temperature between the TXV and the air coil. The UPM board is aware of the mode of operation, and this sensor will be monitored in the cooling mode.

Contact your local contractor for service. Press **ENTER** key to return to normal thermostat display.



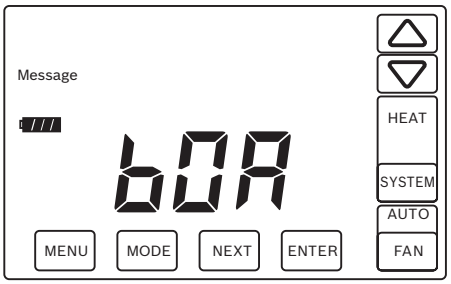
CONDENSATE LINE ALERT

The equipment has detected a condensate line blockage condition and prohibited cooling calls. Contact yourlocal contractor for service. Press the **ENTER** key to return to normal thermostat display.



BROWNOUT ALERT

The equipment has detected a power brownout condition and prohibited heating and cooling calls. Contact yourlocal contractor for service. Press the **ENTER** key to return to normal thermostat display.

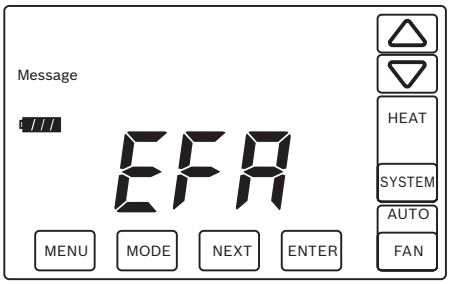


EVAPORATOR FREEZE ALERT

The equipment has detected a freeze condition and prohibited heating and cooling calls.

The sensor that has triggered this fault is monitoring the refrigerant temperature between the TXV and the water coil. The UPM board is aware of the mode of operation, and this sensor will be monitored in the heating mode.

Contact your local contractor for service. Press **ENTER** key to return to normal thermostat display.

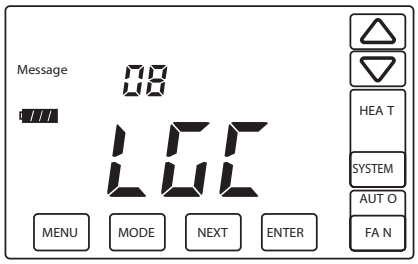


LOST EQUIPMENT COMMUNICATION

The thermostat has detected a loss of communication with the equipment,receiving module or zoning panel. Check the wiring connections. See the troubleshooting section at the end of this manual or contact your local contractor for service. Press the **ENTER** key to return to normal thermostat display.

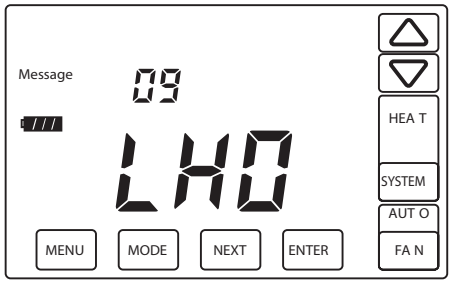
LOST GATEWAY COMMUNICATION

This fault will only be produced if Option 29 - Internet Connection is being utilized. See the Tech Menu Setup Explanation for more information. The thermostat has detected a loss of communication with the Gateway and internet access. If the condition persists, see the troubleshooting section at the end of this manual or contact your local contractor for service. Press the **ENTER** key to return to normal thermostat display.



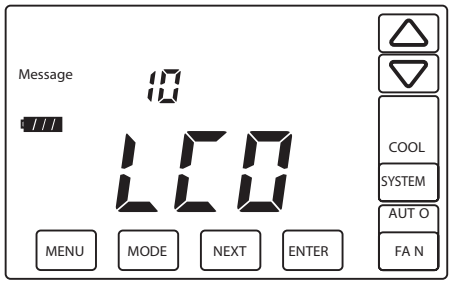
LOW HEATING OUTPUT

This fault will only be produced if Option 19 - Heating Equipment Monitoring is being utilized. See the Tech Menu Setup Explanation for more information. The thermostat has detected the heating equipment output is below its limit. This can be caused by unusually severe cold weather. If the condition persists, contact your local contractor for service. Press the **ENTER** key to return to normal thermostat display.



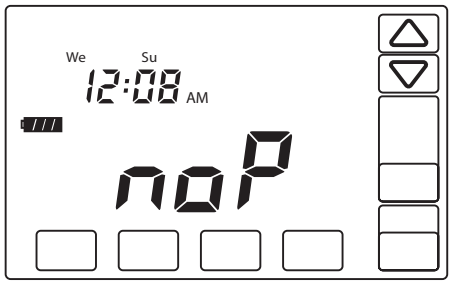
LOW COOLING OUTPUT

This fault will only be produced if Option 20 - Cooling Equipment Monitoring is being utilized. See the Tech Menu Setup Explanation for more information. The thermostat has detected the cooling equipment output is below its limit. This can be caused by unusually severe hot weather. If the condition persists, contact your local contractor for service. Press the **ENTER** key to return to normal thermostat display.



LOST POWER

If the power to the equipment is lost, the Receiving Module and Thermostat loss power and the thermostat goes into a low power operating mode to maintain the clock using the 3V coin cell. The keys and back lighting are inhibited until power is restored. Only the time and “noP” is shown on the LCD indicating there is no power available to operate the equipment.

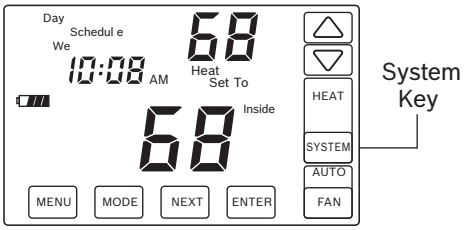


INITIAL THERMOSTAT SETTINGS

The user options can be accessed using Menu key or by pressing certain areas on the LCD.

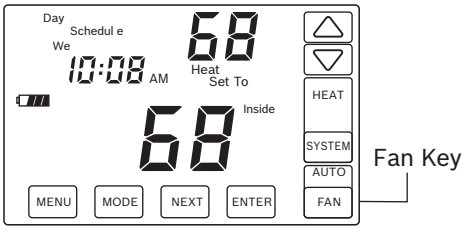
SELECTING HEATING OR COOLING

By pressing SYSTEM button, you can rotate through the 4 operation mode choices: **OFF, HEAT, EmHEAT, COOL, AUTO**. Select **OFF** to turn both heating and cooling off. Select **HEAT** for heating only or **COOL** for cooling only. Select **AUTO** for automatic changeover of heating and cooling. When used for heat pump control, the emergency heating can be operated by selecting EmHeat.



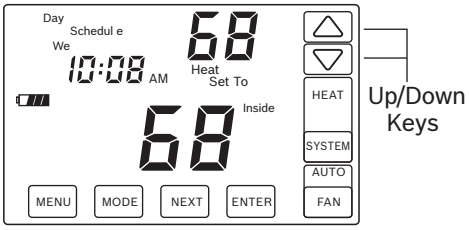
SELECTING AUTO OR CONT FAN

Select AUTO to allow the fan to be activated when needed by a heating or cooling call. Select CONT to operate the fan continuously for ventilation.



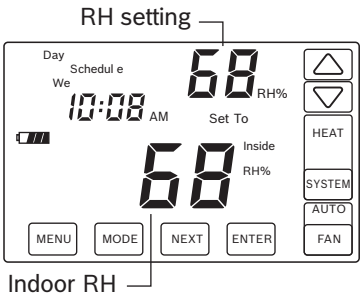
ADJUSTING THE TEMPERATURE SETTING.

Press the △ arrow to raise the temperature setting or press the ▽ arrow to lower the setting. To change the non-calling system temperature setting, press the **NEXT** key to switch from heat to cool setting or cool to heat setting and use the △ and ▽ arrows to set the temperature. The mode in which the set point is being established will be displayed underneath the set point temperature (ie. Heat will be displayed when establishing the set point for heating).



ADJUSTING RH SETPOINTS FOR HUMIDITY CONTROL.

(Only available with TSTBT4H2CPHM--A & TSTBT4H2CPHMW-A model thermostats)
If a thermostat has an RH sensor, use the **NEXT** key to select RH setting for dehumidification or humidifier control. Use the △ and ▽ keys to raise or lower the RH setting.



SELECTING OPERATING MODE

There are four operating modes: Schedule Operation, Temporary Hold, Permanent Hold, and Vacant Mode.

Press and hold the **MODE** key to switch between Schedule Operation, Temporary Hold, Permanent Hold, or Vacant Mode.

In Schedule Operation, the temperature settings for heating and cooling are automatically set according to the Morning, Daytime, Evening, and Night times and temperature settings for each day of the week. See the schedule programming section above on instructions how to establish temperature set points and time of day that each program will apply.

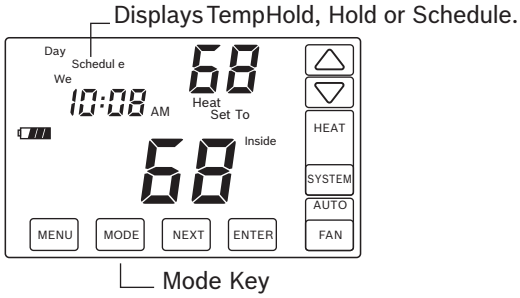
The Temporary Hold mode is activated when the △ or ▽ keys are pressed to adjust the temperature setting during the schedule operation. “TempHold” will be displayed instead of “Schedule” for the duration for the temporary set point once the back light has dimmed. The temperature settings are held for 3 hours and then will resume with the normal schedule settings for that specific time of day.

Permanent Hold mode is a permanent temperature override and ignores the schedule and maintains the settings established by the △ and ▽ keys until the status is manually changed by the user.

The Vacant mode maintains the space to temperatures established by the user to minimize energy consumption while maintaining necessary space conditions when they are away for an extended amount of time; on vacation for example. This is a permanent holding feature until the status is manually changed by the user.

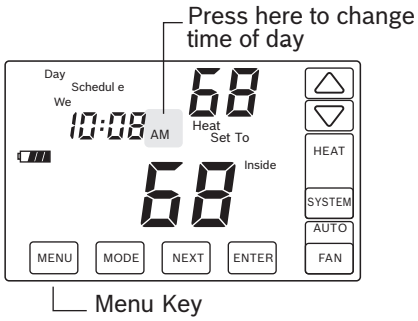
Press and hold the **MODE** button until “Vacant” is displayed.

1. Use the △ and ▽ buttons to establish the heating set point.
2. Push **NEXT.**
3. Use the △ and ▽ buttons to establish the cooling set point.
4. Push **NEXT.**
5. Use the △ and ▽ buttons to establish the humidity set point.
6. The back light will dim within 5 seconds and the settings will take affect.



SETTING THE TIME AND DAY OF THE WEEK

The time of day and day of the week can be set using the **MENU** key or by pressing AM-PM key area shown in gray.



1. Press the “AM” or “PM” text or **MENU** button once.
2. Use the △ or ▽ button to adjust the hour of day.

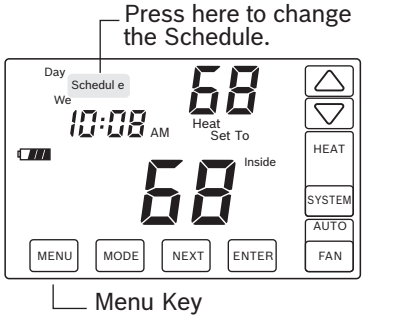
Pay attention to ensure the PM or AM is set correctly

3. Push **NEXT** to proceed to set the minutes.
4. Use the △ or ▽ button to adjust the minutes.
5. Push **NEXT** to proceed to set the Day of the week.
6. Use the △ or ▽ button to adjust the Day of the week.
7. Push **ENTER** to exit the setup menu and back to the home screen.

ENTER can be pressed at any time during the time setup procedure to exit the setup menu and back to the home screen

SCHEDULE PROGRAMMING

All communicating Bosch thermostats are shipped with an energy saving pre-program. You can customize this default program by following the programming instructions below.



The thermostat schedule can be set by pushing the **MENU** button twice or by pressing “Schedule” from the thermostat home screen. There are 4 different time periods for each day (Morn, Day, Eve, Night). Each time

period has two set points, one for Cooling Mode and one for Heating Mode.

1. From the thermostat home screen, press **MENU** twice or “Schedule” to enter the Programming Setup Menu.
2. **MORN** is the first time period displayed.
3. Use the △ or ▽ button to adjust the start time for the current time period. The time duration is in 15 minute intervals.
4. Push **NEXT.**
5. Set the set point for the Heating mode using the △ or ▽ button. You will see “Heat” beneath the set point temperature.
6. Push **NEXT.**
7. Set the set point for the Cooling mode using the △ or ▽ button. You will see “Cool” beneath the set point temperature.
8. Push **NEXT.**
9. The next time period is now displayed.
10. Repeat steps 3-8 to establish the start time for that time period and the heating and cooling set points for that time period.
11. Push **NEXT.**

The current screen at this point is used to assign the current schedule being established to specific days.

7 DAY PROGRAM SCHEDULE

(CONTINUED FROM SCHEDULE PROGRAMMING)

The time schedule and set points have been determined, but they have not been assigned to specific day at this point.

The default setting for the TSTBT4H2CP Thermostat Series is a 7 Day Schedule. All 7 days are displayed. All 7 days will utilize the schedule just created if no changes are made at this point.

12. Press **ENTER** to apply the schedule just created to all 7 days of the week.

CUSTOM PROGRAM SCHEDULE

(CONTINUED FROM SCHEDULE PROGRAMMING)

Some days may require a different schedule program; whether it be a different time period definition or different heating / cooling set points. To create specific schedules for specific days, continue from the Schedule Programming Steps 1-11 from above and continue with the following instructions. Each day can have its own unique programmed schedule and set points; for a total of 7 possible unique schedules for the TSTBT4H2CP Thermostat Series.

The decision to be made here is what days the scheduled program will be assigned to; this is accomplished by removing the days that the program will not be associated with. The remaining days being displayed are the days that the current schedule will be assigned to.

Picking up after step 11 from above:

Currently all 7 days are being displayed and an “01” is displayed in the u day. By pressing the △ or ▽ button, you will see “Mon” appear or disappear. This is how you add or remove Monday from the current schedule program. The △ button adds “Mon” to the list of days affected, the ▽ button removes “Mon” from the list of days affected.

Creating a 5+2 Schedule Example (Weekday Schedule + Weekend Schedule):

13. Press the **NEXT** button until “06” is displayed in the upper right hand corner (Day 6 which is Saturday).
14. Press the ▽ button to remove “Sat” from the days being displayed.
15. Press the **NEXT** button to change the day number to “07” (Day 7 is Sunday).
16. Press the ▽ button to remove “Sun” from the days being displayed.
17. Currently you should only see Mon, Tue, Wed, Thu, Fri being displayed. Press **ENTER** button.

You should now be back to the thermostat home screen and the schedule that was just created has been applied to Mon-Fri.

18. Repeat Steps 1-11 from above establishing times and set points to apply for the weekend (Sat & Sun).
19. All days should be displayed and “01” should be in the upper right hand corner. Press the ▽ button to remove “Mon” from the days being displayed.
20. Press the **NEXT** button to change the day number to “02” (Day 2 is Tuesday).
21. Press the ▽ button to remove “Tue” from the days being displayed.

22. Continue in this fashion to remove “Wed”, “Thu”, & “Fri’ from the days being displayed.

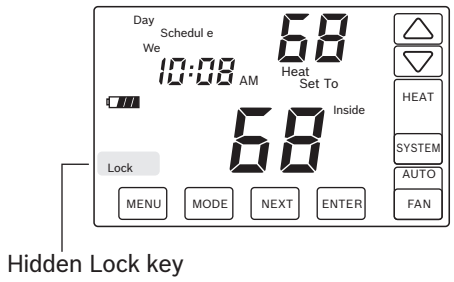
23. At this point, only “Sat” & “Sun” should be displayed. Press **ENTER** button.

You should now be back to the thermostat home screen and the schedule that was just created has been applied to Saturday and Sunday.

LOCKING THE THERMOSTAT

If the key locking option was enabled in the Tech Menu Setup (Option #26), the keys can be locked or unlocked to keep unauthorized changes to the thermostat. With the thermostat locked, no changes can be made; including set point temperatures, operation mode, and fan control.

If the thermostat is unlocked, “Lock” will be displayed, if the thermostat is locked, “Locked” will be displayed.

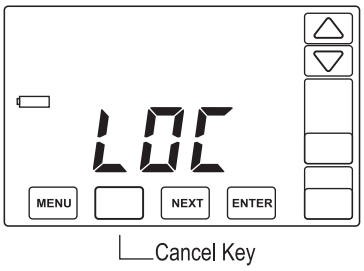


Hidden Lock key

HIDDEN LOCK KEY

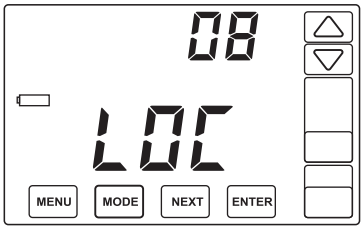
To Lock the Thermostat

1. Push **LOCK** and hold for 2 seconds (the screen shot below will be displayed).



Cancel Key

2. Push the △ button until the two digit code is displayed in the upper right hand corner (see the screen shot below).

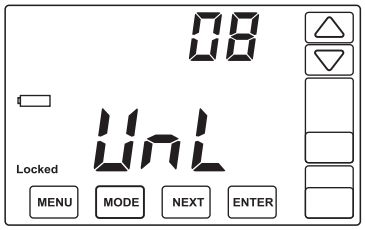


3. Press **ENTER**

The Cancel key (blank key-second from the left) can be pushed at any time to cancel out of the sequence and will return to the home screen without changes saved.

To Unlock the Thermostat

1. Push **LOCKED** and hold for 2 seconds (the screen shot below will be displayed).



2. Push the △ button until the two digit code is displayed in the upper right hand corner (see the screen shot below).

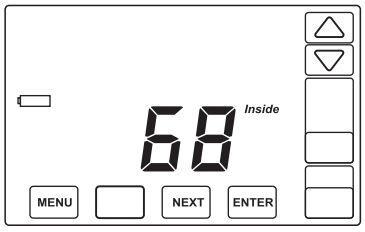
3. Press **ENTER.**

The Cancel key (blank key-second from the left) can be pushed at any time to cancel out of the sequence and will return to the home screen without changes saved.

CALIBRATING THE INDOOR TEMPERATURE SENSOR

The indoor temperature sensor can be calibrated to match your old thermostat.

By pressing the **MENU** button 3 times from the thermostat home screen to display the current space temperature; the display below appears:

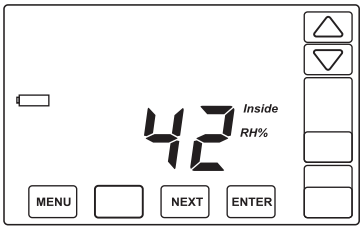


Use the △ and ▽ keys to select the indoor temperature that corresponds to your old thermostat or reference and then press **ENTER**.

CALIBRATING THE INDOOR RELATIVE HUMIDITY SENSOR

(Applicable for TSTBT4H2CPHM--A, & TSTBT4H2CPHMW-A models only)
The indoor relative humidity sensor can be calibrated to match any reference.

By pressing the **MENU** button 4 times from the thermostat home screen, the display below appears

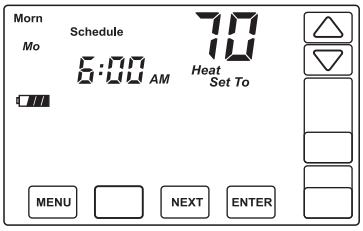


Use the △ and ▽ keys to select the indoor temperature that corresponds to your old thermostat or reference and then press **ENTER**.

DISPLAYING THE TIME AND TEMPERATURE SCHEDULE

The complete lime and temperature schedule can be displayed.

By pressing the **MENU** button 4 times from the thermostat home screen, the display below appears



Repeatedly press the **NEXT** key to display the scheduled times and temperature settings. The factory set schedule is shown on the following page.

7 Day Factory Default Program				
Day of the Week	Time Period	Time	Setpoint Events Time Temperature (Heat)	Setpoint Temperature (Cool)
Weekday	Morn	6 a.m.	70° F (21° C)	78° F (26° C)
	Day	8 a.m.	62° F (17° C)	85° F (29° C)
	Eve	6 p.m.	70° F (21° C)	78° F (26° C)
	Night	10 p.m.	62° F (17° C)	82° F (28° C)
Saturday	Morn	6 a.m.	70° F (21° C)	78° F (26° C)
	Day	8 a.m.	62° F (17° C)	85° F (29° C)
	Eve	6 p.m.	70° F (21° C)	78° F (26° C)
	Night	10 p.m.	62° F (17° C)	82° F (28° C)
Sunday	Morn	6 a.m.	70° F (21° C)	78° F (26° C)
	Day	8 a.m.	62° F (17° C)	85° F (29° C)
	Eve	6 p.m.	70° F (21° C)	78° F (26° C)
	Night	10 p.m.	62° F (17° C)	82° F (28° C)

USE THE TABLE BELOW TO PLAN YOUR CUSTOMIZED PROGRAM SCHEDULE IF USING 5+1+1.

Custom User Schedule				
Day of the Week	Time Period	Time	Setpoint Events Time Temperature (Heat)	Setpoint Temperature (Cool)
Weekday	Morn			
	Day			
	Eve			
	Night			
Saturday	Morn			
	Day			
	Eve			
	Night			
Sunday	Morn			
	Day			
	Eve			
	Night			

TSTBT4H2CP THERMOSTAT SERIES INSTALLATION TROUBLESHOOTING

	Problem	Possible Explanation	Possible Solution
1	Display on thermostat not illuminated	Power is not available to the thermostat	1. Verify that 8 VDC is at the ""+VDC"" terminal. Check for proper wire connections to the thermostat mounting plate and also at the terminal connection at the TRM located by the equipment. 2. If all connections are correct, thermostat is bad. Replace thermostat and contact your Bosch distributor if your thermostat is still under warranty."
2	No Cooling	Thermostat Settings are not correct	1. Verify that the thermostat mode is in "COOL". If not, push the **SYSTEM** button until "COOL" is displayed. 2. Verify the set point temperature is not higher than the space temperature. If it is, use the (down) button to adjust the set point to below the space temperature to initiate a cooling call.
3	No Heating	Thermostat Settings not correct	1. Verify that the thermostat mode is in "HEAT". If not, push the **SYSTEM** button until "HEAT" is displayed. 2. Verify the set point temperature is not lower than the space temperature. If not use the (up) button to adjust the set point to above the space temperature to initiate a heating call.
4	No Heating or Cooling	Thermostat has locked out compressor due to minimum off time setting	Once the space temperature matches the set point temperature on the thermostat, the heating or cooling call is removed and the equipment turns off. If the user changes the set point temperature within the minimum off time, the equipment will not come on. This is a protection feature for the compressor and is normal. Wait 10 min and verify if equipment has began operating in heating or cooling mode. If unit remains off, call a licensed technician.
5	Heating comes on during a cooling call with a heat pump	The thermostat is not set up correctly for a heat pump.	Call a technician as the thermostat must be set up correctly. There are many settings to be made and should only be attempted by a trained technician.
6	"Filter" is displayed on the thermostat	The time duration for a filter change has been surpassed.	Change the filter and reset the filter timer by pressing the area of where "Filter" is displayed
7	"UV Bulb" is displayed on the thermostat	The time duration for a UV bulb change has been surpassed.	Change the UV bulb in the system and reset the UV bulb timer by pressing the area of where "UV Bulb" is displayed. Always check the manufacturer of the UV system on how to perform general maintenance.
8	"HumPad" is displayed on the thermostat	The time duration for a Humidifier Pad change has been surpassed.	Change the humidifier pad and reset the pad timer by pressing the area of where "HumPad" is displayed. Always check the manufacturer of the humidifier on how to perform general maintenance.
9	Fan will not turn off	Fan setting is set to ON instead of AUTO	Press the FAN button to change the status to AUTO
10	The set point will not go any higher or lower	The set point limits have been reached	There is a maximum temperature in heating that cannot be surpassed and a minimum temperature in cooling that cannot be surpassed. The technician who installed the thermostat may have set these limits to protect the equipment. The end user should not modify these settings and should consult with a trained technician who is familiar with the equipment being used.

	Problem	Possible Explanation	Possible Solution
11	A fault code is being displayed on the thermostat screen	Reference the Fault Code section in this manual to indentify the fault	Consult a licensed professional if any of the following faults occur: HP1, HP2, LP1, LP2, FrA, CLA, bOA, EFA, LEC, LHO, LCO
			Consult the literature for the gateway for fault code LGC in order to re-establish communication with the gateway
13	Equipment is not responding to thermostat changes	Loss of Equipment Communication / No Communication	Verify that the COM LED on the TRM at the equipment is blinking green. If it is red, then communication has been lost for at least 10 minutes. See Item #14 for possible solution
		Wiring is loose or incorrect between TRM and HVAC Equipment	Check all wiring between the right hand side of the TRM to the thermostat. Verify that the wiring is consistent on both ends and that loose wire stands are not present as to possibly create a short.
		There is not power to the TRM	Since the TRM is not responding to the thermostat, the HVAC LED or COM LED may not be on and does not help diagnose the issue. Remove the cover to the TRM and verify between terminals R & C (located on the right side) that there is at least 18 VAC. If 18 VAC is not present, the issue could be in the wiring from the transformer located in the equipment or the transformer itself is bad. Verify low voltage output of the transformer in the equipment.
14	Loss of Equipment Communication or No Initial Equipment Communication and COM LED light is red on the TRM	Loose Wiring on thermostat	Remove the thermostat from the back mounting plate and ensue that all 4 wires are securely seated in the terminals. Also verify that there are not wire strands present as this will cause a short. Tighten up terminal screws and trim any wire strands.
		Loose Wiring on TRM	Remove the cover off of the TRM and verify that all wires are securely seated in the terminals. Also verify that there are not wire strands present as this will cause a short. Tighten up terminal screws and trim any wire strands.
		Cross Wiring of Communication Wires between thermostat and TRM	There are 2 wires used for MODBUS communication between the thermostat and the TRM or the thermostat and the zone panel. If a wire is connected to Terminal "A" at the thermostat and terminal "B" at the TRM or Zone panel, this will cause a communication error.
15	Compressor(s) comes on in Heating when using AC with electric heat	Thermostat is set up to operate a heat pump	Enter Tech Menu Setup and change the type of equipment (Option #3) to Gas/Electric (GE). Read through the rest of the menu options as other setting may need to be made; specifically Option #4 (number of Auxiliary Heat Stages)
16	Heating mode is not available when using AC equipment with electric heat	Thermostat is set up to operate AC only	Equipment type AC (established using Option #3 in the Tech Menu Setup) is for a cooling only piece of equipment. In order to be able to run an AC unit with electric heat, change the equipment type to Gas/Electric (GE) in Option #3 setup. Read through the rest of the menu options as other setting may need to be made; specifically Option #4 (number of Auxiliary Heat Stages)

	Problem	Possible Explanation	Possible Solution
17	Heat Pump is in cooling mode when thermostat is in heating mode or vise a versa	"O" terminal is being used when the "B" terminal should be or vise a versa	Some heat pumps are by default in the Heating mode and utilize a “O” call to shift the reversing valve and enable cooling. Other manufacturers of heat pumps have the equipment in cooling mode by default and require a “B” call to shift the reversing valve and enable heating. Verify with the equipment’s literature to understand how the reversing valve is controlled. Verify the wiring between the equipment and the TRM or the equipment and the zone panel to ensure wiring is correct.
18	The thermostat setpoint is not satisfied, yet there is no heating or cooling call to the equipment	Remote room temperature sensors are connected and average the space temperatures with the thermostat	When remote room temperature sensors are connected to the TRM, the space temperatures from the thermostat and the room sensor(s) are averaged. It is possible to have the thermostat not satisfying the set point and still not have the equipment running. The average of the sensor(s) and the thermostat has satisfied the setpoint.
19	Menus described in the Tech Menu Setup Table are not available on the thermostat	Missing menu does not apply to the equipment being used	When the equipment type is chosen using Option #3, certain features or options will not apply. When this is the case, that menu setup is skipped when going through the list of menu setup options.

AVAILABLE ACCESSORIES FOR THE TSTBT4H2CP THERMOSTAT SERIES

Descriptive Part Number	Bosch Part Number	Description	Model Compatibility
ZONB-OTS---M--A	7738002978	Outdoor Temperature Sensor / Remote Room Temperature Sensor	TSTBT4H2CP-M--A TSTBT4H2CPHM--A
ZONB-LAS---M--A	7738002979	Leaving Air Temperature Sensor	TSTBT4H2CP-M--A TSTBT4H2CPHM--A
TSTB--TRM--6--A	7738002948	Translator Communicating Remote Module	TSTBT4H2CP-M--A TSTBT4H2CPHM--A

Specifications for the TSTBT4H2CP Thermostat Series	
The Display Range of Temperature	50 °F - 85°F (10 °C - 30 °C)
The Control Range of Temperature	50 °F - 85°F (10 °C - 30 °C)
Display Accuracy	± 1 °F (± 0.5 °C)
Temperature Swing	1 °F - 1.5 °F (0.5 °C - 0.75 °C)
Power Source	8 VDC from TRM or Bosch Zoning Panel
Operating Ambient Temperature	-4 °F - 167 °F (-20 °C - 75 °C)
Operating Ambient Humidity	10% - 90% RH
Storage Ambient Temperature	-4 °F - 167°F (-20 °C - 75 °C)
Dimensions of Thermostat	3.5” x 4.5” x 1” (H x W x D) (89 mm x 114.3 mm x 25.4 mm)
Dimensions of TRM	5.25” x 3.25” x 1” (H x W x D) (133.4 mm x 82.6 mm x 25.4 mm)

Contact your local Bosch Dealer or Installing Contractor for product support.

Field Technical Support:
866-642-3198

Bosch
601 N.W. 65th Ct.
Ft. Lauderdale, FL 33309
www.bosch-climate.us

PRODUCT LIMITED WARRANTY

Models Covered

This limited warranty is provided by FHP Manufacturing Company ("FHP") and covers the Bosch TST Thermostat (hereinafter referred to as "Product"). This warranty is provided to the original purchaser of the Product as long as the Product remains installed at its original place of installation.

WARRANTY COVERAGE

Limited Warranty

FHP warrants that all internal components incorporated into the Product at the time of shipment by FHP shall remain free from defects in workmanship and materials for the shorter of five (5) years from proof of certificate of occupancy date, five (5) years from proof of certified start up date or six (6) years from date of manufacture provided it is installed and properly maintained by a qualified and trained HVAC contractor and the other conditions of this warranty are met. If FHP determines that the Product has a defect in workmanship or materials, FHP, at its option, will repair or replace the defective part.

ITEMS NOT COVERED

This limited warranty does not cover the following circumstances:

1. Components or parts not provided by FHP.
2. Components or parts on which the tags or nameplates have been removed, altered or defaced.
3. Scratches in or discoloration of finishes.
4. Serviceable items and normal maintenance as required per the Installation and Maintenance Manual.
5. The workmanship of any installer. FHP disclaims and does not assume any liability of any nature for unsatisfactory performance caused by improper installation, repair or maintenance.
6. Any labor or material costs for removal, reinstallation, repair and replacement of the defective component or part.
7. Electricity or fuel costs, or any increases or unrealized savings in same, for any reason whatsoever.
8. Damage caused by excessive temperatures or pressures, fuel or gas explosion, electrochemical reaction, water and air impurities, electrical failures, use during construction, flooding or acts of God.
9. Any damage or failure resulting from the introduction of harmful chemicals, caustic fluids, or liquids detrimental to any unit component, including but not limited to improperly applied or maintained heat transfer fluids or chlorinated pool or spa water
10. Any damage or failure resulting from improper unit sizing.
11. Shipping charges, delivery expenses or administrative fees incurred by the purchaser in repairing or replacing the Product.

CONDITIONS OF WARRANTY

The warranty herein is void under the following circumstances:

1. Failure or malfunction resulting from improper or negligent operation, accident, abuse, freezing, electrical imbalance characteristics, misuse, unauthorized alteration, incorrect electrical supply, electrical surges, or improper installation, repair or maintenance. See the Installation and Maintenance Manual for installation and maintenance information.
2. Failure or malfunction resulting from any conditions within the structure, including mold and/or mildew and/or any chemical or toxin secreted there from or damage resulting from mold, fungus or bacteria.
3. Failure or malfunction resulting from a contaminated or corrosive air or liquid supply, the addition of unapproved chemicals, operation at abnormal temperatures, pressures or flow rates, opening of the refrigerant circuit by unqualified personnel or any attachment, accessory or component not authorized and approved by FHP. See the Installation and Maintenance Manual for installation and maintenance information.

4. Failure or malfunction due to misapplication or faulty building design or construction, including inadequate refrigerant levels, condensate drain, duct work design or installation.
5. Product on which payment to FHP is or has been in default.
6. Work performed without prior authorization or approval and without authorization/requisition number and without proper documentation verifying compliance with above terms.

LIMITED WARRANTY

OTHER THAN THE OBLIGATIONS OF FHP EXPRESSLY SET FORTH HERIN, **FHP DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** FHP'S SOLE OBLIGATION WITH RESPECT TO THE PRODUCT AND **PURCHASER'S EXCLUSIVE REMEDIES ARE SET FORTH IN THE FOREGOING LIMITED WARRANTY. FHP SHALL NOT BE LIABLE FOR ANY INDIRECT, PUNITIVE, INCIDENTAL, SPECIAL, CONSEQUENTIAL OR SIMILAR DAMAGES** INCLUDING, WITHOUT LIMITATION, INJURY OR DAMAGE TO PERSONS OR PROPERTY OR DAMAGES FOR LOSS OF USE, LOST PROFITS, INCONVENIENCE OR LOSS OF TIME.

Note that any repaired or replaced product will be warranted for only the unexpired tem of the original warranty.

Some states do not allow the exclusion of limitation of damages, or limitations on how long an implied warranty lasts, so the above limitations and exclusions may not apply to you.

WARRANTY CLAIMS PROCESS

If you have a warranty claim you should notify the contractor who installed your Product and ask that the contractor notify FHP Manufacturing Company, 601 N.W. 65th Court, Ft. Lauderdale, FL 33309. To process your claim, you will need a copy of your original invoice or other proof of purchase, the product serial number and documentation showing the original installation date and location. The alleged defective components or parts must be returned to FHP in accordance with FHP procedure then in force for handling goods returned for the purpose of inspection to determine cause of failure (contact FHP if you have questions regarding the return process). If FHP determines that the returned components and/or parts are defective and that this warranty applies, FHP will furnish the repaired or replacement components and/or parts to the contractor who installed your Product.

This Warranty applies to FHP products installed in the Continental United States and Canada only.

BOSCH

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